

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT: **YEAR ONE** REPORT



FLORIDA DEPARTMENT OF
EDUCATION
CAREER AND ADULT EDUCATION

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EXECUTIVE SUMMARY

Florida is the third most populous state in the nation and the number one state for higher education according to U.S. News and World Report. Florida's leaders have prioritized high-quality education across the entire education continuum, with a focus on ensuring all students gain the skills and knowledge needed to meet our state's workforce demands. Despite strong efforts, too many Floridians are without the kind of credentials they need for professional success. And while more students in Florida are graduating from high school on time, many remain unprepared for postsecondary studies.

With the advent of the COVID-19 pandemic, the value of a postsecondary degree is important to recognize. For example, of all those who were laid off or filed for unemployment since the start of the pandemic, over 63% were those without a high school diploma or a postsecondary degree. Those with a bachelor's degree represented less than 20% of those impacted. In short, less educated workers saw higher unemployment.

Given Florida's economic diversification and prosperity aims, emerging market trends and the effects of a COVID-impacted economy, we need swift action to increase Florida's educational attainment rates to ensure working-age adults have a high-quality credential that prepares them for access to and longevity in a mid- to high-wage occupation.

Executive Order 19-31 reinforced the fact that Florida needs to prepare now for our economy's future needs and gave the Florida Commissioner of Education a series of directives, including an annual review of career and technical education (CTE) programs. The Executive Order clearly stated that the Florida Department of Education (department) is to use the audit findings to guide recommendations to eliminate course offerings that are not aligned to market

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demands; to create new offerings that are aligned to market demands; and to strengthen existing programs as needed. The Executive Order served as a catalyst for the department to reexamine existing processes to develop a more robust process to monitor programmatic alignment.

To that end, the department conducted the CTE audit in three phases which are represented in this report. Phase 1 reviewed all CTE programs at the statewide level. Phase 2 reviewed select programs at the local level. Phase 3 identified best practices for the local review of institutional program performance. To accomplish our goal to systematically measure all secondary and postsecondary CTE programs for quality, the department engaged with leaders in states that are achieving exemplary outcomes and established an advisory group and several expert groups to provide critical feedback on the CTE audit process and associated measures of program quality and program quality indicators (PQIs).

For career preparatory, technology education and all postsecondary programs, the PQIs assess program quality through two lenses. First, what is the market demand for the program? These PQIs are intended to identify the extent to which there are data that support the demand for the program at statewide and regional levels. Second, how is the program performing? Programs are assessed based on their performance on key institutional measures of program quality that relate to student progression and completion and post-completion outcomes.

In Phase 1 of the CTE audit, programs were found to have met market demand if the program met at least one of the workforce PQIs. In determining performance on institutional PQIs, each postsecondary program had the opportunity to receive 40 points, where each institutional measure had a value of 10 points, and each secondary program had the opportunity to receive 30 points. Institutions that fell above the lowest quartile met institutional benchmarks. For the purposes of the audit, programs in these categories did not receive any further review by the department but will in the future.

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Programs that did not meet benchmarks on market demand or institutional performance underwent local program review – reviews designed to provide additional information about each program to inform the CTE audit outcomes.

Of the total CTE programs in the 2019-20 audit cycle, 495 career preparatory, technology education and postsecondary programs – 89 secondary and 406 postsecondary – underwent a statewide benchmarking process in Phase 1 that evaluated both institutional performance and market demand. The results are summarized in Figure 1 (note: percentages may not add up to 100% due to rounding). For the active programs with sufficient data, the statewide review found:

- The majority (68 percent) of CTE programs met benchmarks on market demand and on institutional performance.
- More than one-fourth (26 percent) of CTE programs did not meet benchmarks on institutional performance but did meet benchmarks on market demand.
- Four percent of CTE programs did not meet market demand benchmarks but did meet institutional performance benchmarks.
- Two percent of CTE programs had low market demand and low institutional performance.

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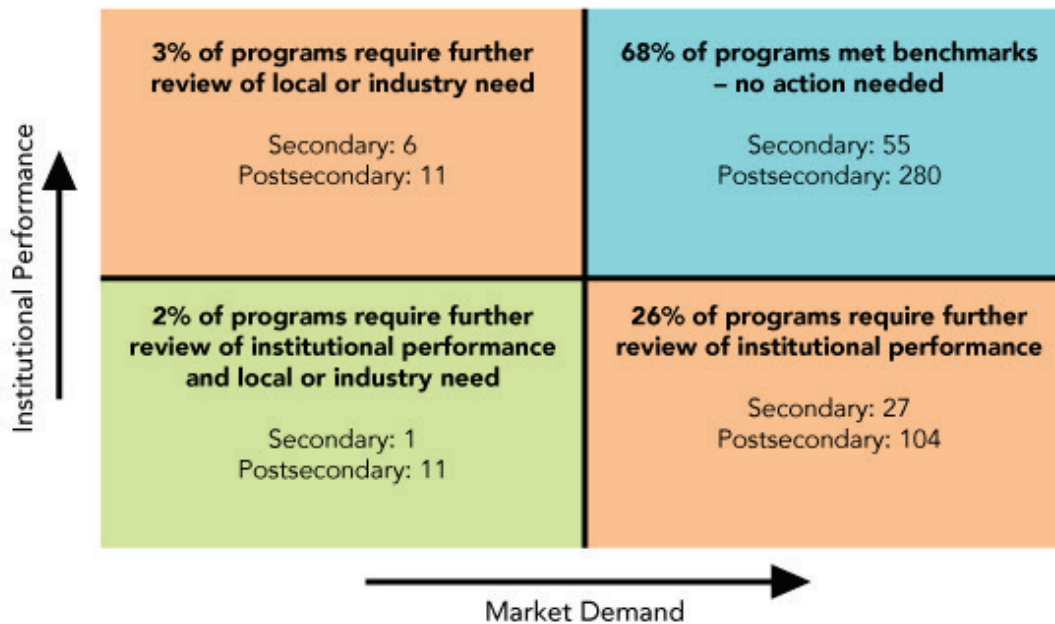


Figure 1: CTE Audit: Results from Statewide Program Review (n=495)

If a program was found to be deficient in market demand, that program went through a market demand local review. Likewise, programs found deficient in program performance went through a program performance local review. Institutions found deficient in both categories went through both local reviews. Phase 2 of the audit occurred in summer/fall 2020 for career preparatory, technology education and all postsecondary programs.

From the total of 1,195 CTE programs in career preparatory, technology education and postsecondary at the time of the first year of the audit, 169 programs were identified for removal from the state’s curriculum frameworks; 139 programs (22 secondary and 117 postsecondary) are new and were assessed at the state level only for market demand; and 233 active but not new programs (41 secondary and 192 postsecondary) did not have data sufficient to conduct an analysis of program performance using state level data. The 159

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middle grades, work-based learning/capstone and other CTE offerings were evaluated using a separate process.

Programs that did not meet benchmarks on market demand or institutional performance at the statewide level (phase 1) were sent for a local review by every district and college that offers those programs. These included all programs that did not meet benchmarks in phase 1, as well as programs with insufficient data for analysis in phase 1 and programs that were new (and therefore excluded from the full phase 1 review) but did not demonstrate market demand. This resulted in a total of 943 local secondary programs being reviewed and 1,133 local postsecondary programs being reviewed across all districts and colleges.

As a result of Phase 2, the department identified over 500 terminations of programs reported by the districts and colleges of programs sent for a local review. These terminations demonstrate the efficacy of the audit process, as the department, districts and colleges worked carefully and collaboratively to evaluate program offerings at the local level to ensure for high-quality programs that align with changing workforce demands.

Among programs sent for a local review that districts and colleges will continue to offer, market demand and institutional performance were verified/demonstrated using a variety of sources. Local demand was primarily demonstrated through program alignment to occupations found on the Regional Demand Occupation Lists and letters of support from industry associations or local workforce development boards. A small number of local programs did not provide evidence of market demand. The department plans to follow up with districts and colleges offering these programs.

Additionally, the majority of reviews of local program performance demonstrated quality program performance. In the first year of the audit, districts and colleges were not required to follow a specific format of their local

review; rather, the department asked institutions to submit their most recent existing program evaluation.¹ Department staff evaluated the local reviews of program quality and found a wide range of the types of program quality reviews occurring at the local level.

Approximately 400 programs across numerous districts and colleges failed to provide sufficient data or information for the department to confirm local program quality. In the coming months, the department plans to follow up with these districts and colleges, providing support for conducting a more rigorous local review. In short, these programs will be flagged for review in the second year of the CTE audit. Approximately 1,600 programs, or all others, demonstrated either acceptable or high-quality local program performance.

In addition to refining the methodology for what constitutes a valuable credential – both in terms of market demand and local performance – year two of the CTE audit will employ additional strategies learned throughout the year one process in order to enhance the CTE audit process. It will seek to integrate a robust return on investment methodology, for example, with the purpose of improving the alignment between quality CTE offerings at the local level and Florida's economy.

¹ Florida educational institutions submit program reviews every few years to obtain and maintain accreditation from accrediting bodies such as the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and the Council on Occupational Education (COE). In addition to conducting program reviews for accreditation purposes, some institutions more regularly conduct other program reviews to self-monitor their programs. Any of these types of program reviews were acceptable submissions for year one of the CTE audit.

SECTION 1:

INTRODUCTION

Florida is preparing for a time of unprecedented change. By 2030, the state will be home to approximately 26 million residents with one of the most diverse populations in the United States. Now the third most populous state in the nation and home to the 17th largest economy in the world, Florida is witnessing rapid technological expansion and innovation across all sectors of life. The pandemic notwithstanding, Florida's markets for goods, services and ideas – and our competition for talent, customers, investments and market share – are becoming globalized at an accelerated pace. In order to meet the demands of the future of work while maintaining its standing as the number one state for higher education, Florida must work to better align its education and training aims to industry. Moreover, Florida's educational system must be flexible enough to educate for emerging skills, well equipped to reengage adult workers and thoughtful about the possibilities around entrepreneurship education, start-up incubation and scale-up acceleration.

In early 2019, Executive Order 19-31 (19-31) "Charting a Course for Florida to Become Number 1 in the Nation for Workforce Education by 2030" was issued. 19-31 reinforced the fact that Florida needs to prepare now for our economy's future needs and gave the Commissioner of Education a series of directives including the development of a methodology for the annual review of the state's CTE programs, specifically:

1. An audit of the course offerings in the state CTE system is completed and a methodology to audit and review the offerings annually is developed. The audit should include:
 - a. An analysis of alignment with certificate or degree programs offered at

- the K-12 and postsecondary levels;
 - b. An analysis of alignment with professional-level industry certifications;
 - c. An analysis of alignment with high-growth, high-demand and high-wage employment opportunities; and
 - d. A review of student outcomes such as academic achievement, college readiness, postsecondary enrollment, credential attainment and attainment of industry certifications.
2. The Florida Department of Education will work with and utilize the expertise of the following stakeholders: CareerSource Florida, the Department of Economic Opportunity (DEO), the Board of Governors, the Florida College System (FCS), school districts and business and industry leaders to ensure CTE course offerings are aligned with market demand;
 3. The Department of Education will develop CTE best practices for partnerships between high schools, postsecondary institutions and businesses; and
 4. The Department of Education will make recommendations to the Governor on an annual basis to eliminate course offerings that are not aligned to market demands, to create new offerings that are aligned to market demands and to strengthen existing programs as needed.

Further, in 2019, the Florida Legislature passed landmark legislation and made significant investments in K-20 education to enhance the current system and build upon the existing momentum driving student success – including setting a “SAIL to 60” postsecondary attainment goal and the creation of the Florida Talent Development Council. The Strengthening Alignment between Industry and Learning (SAIL) initiative strives to have to 60 percent of working-age adults (ages 25-64) in Florida with a high-value postsecondary credential by 2030. In support of this goal, the legislature established the 16-member Florida Talent Development Council – composed of legislative, business, workforce and education leaders – to increase educational attainment. In December 2019, the council adopted a strategic plan for 2020-2030, with a focus on developing a coordinated, data-driven statewide approach to meeting Florida’s needs for the 21st century.

The council's efforts directly align with the aims of the audit – namely, to ensure the state's CTE programs and credentials meet the needs of employers. Thankfully, Florida's K-20 system is well positioned to graduate students equipped for the jobs of the future. Its laws, rules, policies, programs and structures ensure for consistency, accountability and the kind of curricular innovation necessary to keep Florida a national leader in policy and practice. In view of ensuring students have access to high-quality, affordable postsecondary credentials, the following mechanisms related to a thriving workforce education system have been established:

- **Career and Technical Education (CTE) Curriculum Frameworks:** With partners from education, business and industry, and trade associations, the department has developed curriculum frameworks which include program standards that are both academically integrated and responsive to business and industry. These common frameworks ensure consistency in student learning outcomes across postsecondary CTE programs across the state. Moreover, the curriculum frameworks are designed with stackable credentials in mind – students can see how the accumulation of certificates can support them in transfer or entry to the workforce. Review of the frameworks to ensure relevancy, rigor and alignment to industry occurs every three years.
- **Statewide Common Course Numbering:** Florida has a long-standing system of common course numbering which distinguishes us from other states in the nation. In addition to guaranteeing transfer of academic credit, common course numbering ensures consistency in statewide learning outcomes. For example, a student taking MAC 1105 College Algebra at Tallahassee Community College is exposed to the same learning outcomes as those taking MAC 1105 at Florida Atlantic University.

- **Performance Incentives:** Eleven years ago, the Florida Legislature passed the Career and Professional Education Act (CAPE) to provide a statewide planning partnership between business and education communities to expand and retain high-value industry and to sustain a vibrant state economy. Within the General Appropriations Act, Florida College System (FCS) institutions and school district career centers can earn bonus funding for select industry certifications earned by their students. Approximately 14,081 fundable industry certifications were earned in 2019-2020. Most of these certifications were earned in health sciences, law, public safety and security. On the secondary side, 130,445 CAPE industry certifications were earned and 61,873 CAPE digital tool certificates were earned during the 2018-2019 school year (based on EIAS Survey 5 data as of October 31, 2019).
- **Articulation Mechanisms:** Articulation agreements are formal agreements between institutions that define transfer policies for a specific course or program. Most importantly, these agreements specify what credits will be validated and awarded by the receiving institution. In addition to Florida's seminal statewide 2+2 articulation agreement that guarantees associate in arts graduates admission to a state university, the State Board of Education approves the Statewide Career and Technical Education Articulation Agreements with the goal of expanding opportunities for postsecondary degrees and certificates. These statewide agreements include a minimum guarantee of articulated college credit for clock hour to associate in science/ associate in applied science (AS/AAS) degrees, industry certification to AS/AAS degrees, applied technology diplomas to AS/AAS degrees, and AS to baccalaureate degrees.
- **Statewide Longitudinal Data Systems:** Florida is unmatched in its infrastructure and capacity to collect and report timely, high-quality data on students across Florida's K-20 education system. Through the PK-20

Education Data Warehouse, the department provides stakeholders in public education with the capability of receiving timely, efficient, consistent responses to inquiries into Florida's kindergarten through university education. PK-20 Education Reporting and Accessibility, an office within the department, is responsible for producing education reports, longitudinal education reports, federal and legislative reporting and reporting for external research requests.

- **Data Sharing Partnerships:** The Florida Education and Training Placement Information Program (FETPIP) is used to track employment, earnings and continuing education outcomes. The department and FETPIP have a longstanding positive relationship working closely with the state workforce agency. Florida was among the first states in the nation to use unemployment insurance (UI) wage records to track employment outcomes through data sharing agreements and arrangements with DEO. DEO is the state agency that serves as Florida's dual Performance Accountability and Customer Information Agency (PACIA) and State Unemployment Insurance Agency (SUIA). Through the interagency data agreements, FETPIP has direct access to unit record student, graduate and leavers UI wage data to promote program improvement.
- **Stackable Credentials:** The U.S. Department of Labor defines stackable credentials as part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help them move along a career pathway or up a career ladder to different and potentially higher-paying jobs. The goal and intent behind stackable credentials are to provide a learner with multiple on and off ramps. Intentionally designing educational and career pathways so they can be built upon, or stacked, better equips students with the ability to enter into high-skill, high-wage employment, as well as helping to ensure previously earned credentials do not become obsolete. Stackable credentials are also exemplified in the 2+2 articulation agreements. All FCS bachelor of science (BS), bachelor of applied science (BAS) and AS/AAS degrees are built on stackable credentials.

AUDIT SCOPE

CTE programs and courses are offered in public school districts in middle through postsecondary settings. The K-12 CTE programs are classified into the following categories:

- Middle Grades and Career Exploratory (grades 6-8);
- Career Preparatory (grades 9-12);
- Technology Education (grades 6-12);
- Work-based Learning (WBL) and Capstone Courses (grades 9-12); and
- Other CTE courses, including those for students with significant cognitive disabilities and legacy life and family management courses that are not part of a pathway.

FCS institutions and school district career centers, also known as technical colleges, are authorized to provide instruction and confer degrees, certificates and diplomas as prescribed in Rule 6A-14.030, Florida Administrative Code (F.A.C.), Postsecondary Instructional Unit Definitions and Awards in Florida College System Institutions. For the purposes of this audit, only those awards that are identified as career and technical are included. These awards are categorized as follows:

- Career certificates prepare students with specialized skills to go directly into the workforce and are awarded directly by the institution.
- Associate in science and associate in applied science (AS/AAS) degrees are offered in CTE fields and may only be conferred by an FCS institution.
- College credit certificates (CCCs), embedded within AS/AAS programs, are short-term programs that provide highly specialized core knowledge and skills within a particular profession.
- Applied technology diplomas (ATDs), similar to CCCs, provide career and technical instruction as part of AS/AAS programs.

- Registered apprenticeship (Appr) is an industry driven, education and employment model that combines structured on-the-job learning with related technical or classroom instruction to prepare individuals for specific occupations or to acquire new, market-driven skills related to an individual's existing occupation. The related technical instruction (RTI) may be provided by a partnering educational institution or the sponsoring employer itself. Upon successful completion of the program, individuals earn a certificate of completion, which is nationally recognized by the U.S. Department of Labor.
- Lastly, 27 of the 28 FCS institutions are authorized to offer bachelor of science and bachelor of applied science degrees (BS/BAS) in select fields with workforce demand.

AUDIT PHASES

The department developed a methodology for the annual CTE audit that measures program quality to ensure alignment between the state's CTE programs with our established economic and workforce priorities. Given the constant changes within Florida's economy, COVID-19 notwithstanding, the annual review of programs will reaffirm existing CTE programs and identify new programs that should be offered based on the needs of tomorrow. The department employed a staggered roll out of the CTE audit's three phases, with consideration given to both statewide and regional/local needs and demands. Phase 1 was the statewide review of programs, Phase 2 was the local program review and phase 3 is the sharing of information and best practices. Additional detail regarding the phases of the audit appears in section 3 of this report.

STAKEHOLDER ENGAGEMENT

ADVISORY COMMITTEE MEMBERS

To accomplish our goal of systematically measuring secondary and

postsecondary programs for quality, the department established an advisory committee to provide critical feedback on the audit process and associated PQIs. The advisory committee and responsible staff in the department worked together to ensure the audit assessed the extent to which secondary and postsecondary CTE programs are aligned with current workforce needs, met the needs of students, provide paths for economic mobility and prepare students to meet the future needs of Florida's economy. The advisory committee provided support and advice on the development of the audit's framework. Specifically, committee members were engaged to provide:

- Critical feedback on the audit's purpose, priorities and guiding principles;
- Suggestions for the development of key PQIs;
- Qualitative and quantitative program data, where applicable;
- Critical feedback on key recommended components; and
- Feedback on the outcome(s) of the audit and its effectiveness in measuring program quality.

Members of the advisory committee served as ambassadors of respective institutions, associations and constituencies to inform stakeholders of the audit's goals and to provide a connection of an ongoing exchange of information and ideas. The advisory board was composed of several stakeholders who are leaders in Florida and key resources to the higher education and workforce readiness systems, including:

- Business and industry
- CareerSource board member;
- CareerSource Florida;
- Council of 100;
- Education policy experts;
- Enterprise Florida;
- Florida Chamber of Commerce;
- Florida College System;

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- Florida Department of Economic Opportunity;
- Florida Department of Education;
- School district representatives;
- Stakeholder associations; and
- State University System.



Figure 2: CTE Audit Expert Groups

ADVISORY COMMITTEE MEMBERS

In addition to the advisory committee, the department formed expert groups to provide perspective from three key areas: secondary, postsecondary and business/industry (Figure 2). Members of the advisory committee also served on expert groups. The first task of the expert groups was to make recommendations about the programs and corresponding PQIs to be used to measure program quality. Expert groups also weighed in on availability, strength, limitations of data, nuances or considerations in how to measure program quality, the process to establish benchmarks and thresholds and methodologies for identifying new programs aligned to market demands.

AUDIT GUIDING PRINCIPLES

Middle grades career exploratory courses:

- Include the opportunity for students to learn about a variety of careers.
- Provide a foundation for secondary CTE programs.

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Secondary CTE programs:

- Prepare students for high-demand, high-skill, middle-to-high wage and/or relevant job opportunities, locally or statewide.
- Include sequential courses and teach the academic, technical and employability skills required for mastery of the program and industry standards.
- Provide a career pathway to postsecondary credentials in related fields and provide foundational skills that prepare students for a variety of employment opportunities.
- Incorporate quality experiential or work-based learning opportunities, capstone experiences (such as seminars, internships or portfolios), dual enrollment and/or the attainment of industry-recognized credentials.

Postsecondary CTE programs:

- Meet Florida's labor force needs by preparing and qualifying students for high-demand, high-skill, middle-to-high wage and/or relevant job opportunities, locally or statewide.
- Equip students with industry-relevant academic, technical and/or employability skills.
- Are developed as career pathways with stackable credentials, where appropriate, to create and enhance pathways for students.
- Incorporate opportunities for students to accelerate credential attainment through acceleration mechanisms such as career dual enrollment, work experience and/or earned industry-recognized postsecondary credentials.

SECTION 2: CURRENT STATUS OF CTE IN FLORIDA

COURSE AND PROGRAM OFFERINGS

Public school districts (middle schools, high schools and district career centers) and FCS institutions offer CTE programs. At the middle school level, students are introduced to CTE programs in exploration and introductory courses that are designed to pique their interest in learning about career clusters and pathways. At the high school level, students ideally commence study in the ninth grade, which provides them an opportunity to specialize or concentrate their efforts in a particular career and technical program of study. Advanced study in a student's specialized field of interest may continue through an apprenticeship or at the postsecondary level (district career centers, FCS institutions and/or four-year colleges/universities).

Florida's 48 accredited career centers or colleges and 28 FCS institutions prepare students to complete career certificates and associate-level degrees, join the workforce in a specific career area and/or continue their education at the baccalaureate level and beyond. Both school districts and FCS institutions partner with registered apprenticeship sponsors to provide related technical instruction for those programs.

Within CTE programs, students may earn industry-recognized, third-party credentials that demonstrate their technical proficiency in a variety of areas. The

State Board of Education annually adopts lists of digital tool certificates (K-8 only) and industry certifications for which incentives are provided for student attainment of the credentials. K-12 programs and postsecondary institutions earn performance-based funding incentives based on student attainment of these certifications. Students who hold these certificates and certifications demonstrate mastery in a variety of occupational areas for which there is documented demand from employers.

Florida's public education system includes a variety of pathways for students to receive workforce related training. Students have access to several credentials of value that are earned through the K-12 CTE delivery system and through enrollment in postsecondary CTE institutions. The following table provides a brief overview of the various credentials available to Florida's students.

TABLE 1: CTE CREDENTIALS IN FLORIDA

TYPE	DESCRIPTION	LEVEL
Digital Tool Certificate	An independent, third-party assessment of digital skills in the following areas: word processing; spreadsheets; sound, motion and color presentations; digital arts; cybersecurity	K through 8
Industry Certification	A time-limited credential issued by an independent, third-party certifying entity and linked to an occupation in demand, emerging or with critical local or statewide need	6th grade through postsecondary
Apprenticeship Certificate of Completion	Signifies a registered apprentice has successfully completed the technical and academic standards of a registered apprenticeship program	Postsecondary

TYPE	DESCRIPTION	LEVEL
Applied Technology Diploma	Signifies a student has successfully completed technical instruction that is part of an A.S. degree leading to employment in a specific occupation	Postsecondary
Career Certificate	Signifies a student has successfully completed a (clock hour) postsecondary career education program and is ready for employment in a field that requires non-college credit or postsecondary training	Postsecondary
College Credit Certificate	Prepares students for entry into employment in a field that requires some college credit but less than a degree and signifies a student has successfully completed part of an A.S. degree	Postsecondary
Associate in Science Degree	Prepares students for occupations that require a two-year technical degree	Postsecondary
Bachelor's Degree	Prepares students for occupations that require a four-year degree	Postsecondary

Note: K-12 students may utilize dual enrollment opportunities for some of these programs.

REGISTERED APPRENTICESHIP PROGRAMS

In addition to all lower division CTE programs, the Division of Career and Adult Education (DCAE) within the department also oversees registered apprenticeship and pre-apprenticeship programs in Florida. The office conducts

the following program approval and oversight activities for these programs:

- Development and approval of new registered apprenticeship programs and pre-apprenticeship programs in consultation with sponsoring employer(s) and local education institution(s), where applicable, to meet the specific needs of the employer.
- Development of apprenticeship and pre-apprenticeship uniform minimum standards.
- Registration of apprentices and programs on behalf of the U.S. Department of Labor that meet the standards established by the department.
- Registration of pre-apprentices and programs that meet the standards established by the department.
- Quality assessments and compliance reviews of registered apprenticeship and pre-apprenticeship programs to ensure the programs are operating within applicable federal and state regulations.
- Awarding of the certificate of completion to the apprentice and pre-apprentice upon successful completion of the program.

CAREER CLUSTERS

CTE programs are organized into 17 different career clusters and are specifically geared toward middle school, high school, district career center and FCS students throughout the state. Federally, there are 16 career clusters, but Florida identifies energy as its own cluster. With the help of partners in education, trade associations and business and industry, each CTE program at the state level includes the academic, technical and employability skills required of Florida's industry.

- **Agriculture, Food and Natural Resources** programs prepare students for careers in a highly technical and ever-changing sector of the global economy. These programs provide a career pathway to a wide variety of careers in agritechology, animal science, plant science, food products and processing,

and environmental science.

- **Architecture and Construction** programs prepare students for careers in designing, planning, managing, building and maintaining the built environment. Examples of careers include drafters, electricians, construction managers and plumbers.
- **Arts, A/V Technology and Communication** encompasses audio/video technology and film, journalism and broadcasting, performing arts, printing technology, telecommunications and visual arts. Students prepare for these careers by designing, producing, exhibiting, performing, writing and publishing multimedia content including visual and performing arts and design.
- **Business Management and Administration** programs prepare students for careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Career opportunities in this cluster are available in every sector of the economy and require specific skills in organization, time management, customer service and communication.
- **Education and Training** programs offer students educational opportunities, training services and related learning support with an emphasis on improving public education services. The three pathways include administration and administrative support, professional support services and teaching/training.
- **Energy** programs prepare students for careers in planning, managing and providing technical support services related to generation, transmission and distribution of various types of energy. Examples of careers include technicians, line workers, pipelayers and welders.
- **Engineering and Technology Education** programs prepare students for careers as engineers and technologists through the introduction of certain processes in mathematics, science and technology. Students learn how to apply mathematics, science and technology concepts to solve problems quantitatively in engineering projects involving design, development or production in various technologies.

- **Finance** programs prepare students for careers in financial and investment planning, banking, insurance, and business financial management. Finance career opportunities are available in every sector of the economy and require organizational, time management, customer service and communication skills.
- **Government and Public Administration** programs are divided into seven pathways: governance, national security, foreign service, planning, revenue and taxation, regulation and public management and administration. Students who complete these pathways can end up with titles like environmental engineering technician, emergency management director or emergency management specialist.
- **Health Science** is divided into five pathways: therapeutic services, diagnostic services, health informatics, support services and biotechnology research and development. Hundreds of health science education opportunities in a variety of professions are offered throughout the state at the secondary and postsecondary levels.
- **Hospitality and Tourism** programs offer students education in a variety of trades. The pathways in this cluster include restaurant and food/beverage services, lodging, travel and tourism and recreation, amusements and attraction.
- **Human Services** programs are divided into three pathways: counseling and mental health services, family and community services and consumer services. Examples include employment as a social worker in several fields such as working with youth, addiction centers, community centers, with the elderly or in a domestic violence shelter.
- **Information Technology** is the study of design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware. Information technology deals with the use of computers and computer software to convert, store, protect, process, transmit and securely retrieve information.

- **Law, Public Safety and Security** programs are divided into five pathways: corrections, emergency and fire management, law enforcement, legal and security protection. Students in these programs are preparing to plan, manage and provide legal services, public safety, protective services and homeland security, as well as professional and technical support services.
- **Manufacturing** incorporates six pathways: production, manufacturing production process development, maintenance, installation and repair, quality assurance, logistics and inventory control and health, safety and environmental assurance. Students prepare for careers that require planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities.
- **Marketing, Sales and Service** consists of five pathways: marketing management, professional sales, merchandising, marketing communications and marketing research. Students in high school and postsecondary programs are preparing for careers in planning, managing and performing marketing activities to reach organizational objectives. Some examples of careers include customer service representatives, store managers and public relations managers.
- **Transportation, Distribution and Logistics** consists of planning, management and movement of people, materials and goods by road, pipeline, air, rail and water. These programs also contain related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

PROGRAM APPROVAL PROCESS

The DCAE is responsible for facilitating the development and updating of statewide educational programs that prepare individuals for skilled occupations

important to Florida's economic development. Each CTE program is aligned to a career cluster and is detailed in a curriculum framework that is adopted by the State Board of Education. With partners from education, business and industry and trade associations, the curriculum frameworks are a list of program standards that are both academically integrated and responsive to business and industry. Once a program is approved by the State Board of Education, the program and courses within the program are published on the department's website and may be offered locally; that is, by any school district, technical center or college or FCS institution in Florida.

In accordance with Florida Statutes, each program is updated every three years to reflect current business and industry needs specific to the occupation for which it prepares. The department uses various methods of program review and approval for all the programs that result in credentials of value. All program development and approval occur with consultation of industry expert advisors and workforce development resources. With the help of these stakeholders, CTE programs are aligned with the skill requirements needed for Florida's workforce in real time. The DCAE develops and maintains curriculum frameworks for K-12 program adoptions as well as postsecondary, including career certificate, applied technology diploma, college credit certificate and AS/AAS degree programs.

MIDDLE GRADES AND HIGH SCHOOL COURSES

The DCAE produces middle grades (6-8) and high school (9-12) curriculum frameworks in 17 career clusters. The middle grades programs and associated courses introduce students to the various career clusters and help students discover their interests. Exploration in middle grades helps students decide on a pathway for advanced study in high school. Figure 3 depicts a sample middle grades course sequence.

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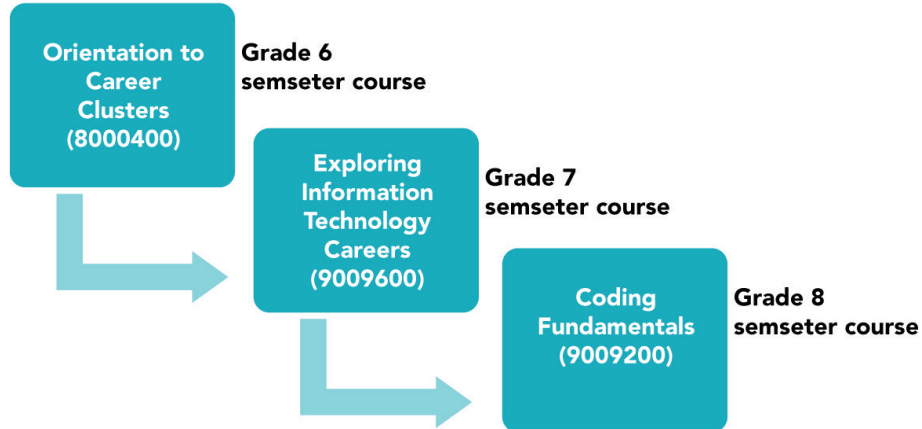


Figure 3: Sample Middle Grades Course Sequence

The high school programs identify the minimum standards and benchmarks necessary to prepare for entry into employment upon high school graduation and after some advanced postsecondary education and training. The programs identify a standard program length and contain associated high school credit courses that are used to deliver the standards and benchmarks. High school CTE programs also primarily satisfy the electives graduation requirement for a high school diploma. As school districts request new programs to prepare students for new or emerging occupations, DCAE requests course numbers from the Office of Articulation's Course Code Directory.

DISTRICT POSTSECONDARY CAREER CERTIFICATE PROGRAMS AND APPLIED TECHNOLOGY DIPLOMAS

The DCAE produces career certificate curriculum frameworks in 17 career clusters. These career certificate programs identify the minimum standards and benchmarks necessary to prepare for entry into employment as well as a standard program length. The programs contain associated clock hour courses that are used to deliver the standards and benchmarks. District career centers are required to enroll students in the program and associated course numbers

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identified in the curriculum framework. They are prohibited from using other Statewide Course Numbering System (SCNS) courses or institutional courses.

In instances where a new course number is needed, the DCAE requests career certificate level course numbers from the Office of Articulation's SCNS. The new courses are assigned according to the standard SCNS postsecondary number format (three-character prefix and four-digit number). Reasons for requesting a new SCNS course number may include the following:

- A brand-new program has been approved and there are no existing SCNS courses that deliver the program's instructional standards and benchmarks; or
- Additional content or training (e.g., HIV/AIDS, PTSD) have been legislatively mandated for a regulated career certificate program and new courses are required.

More information on career certificate courses is available in the SCNS manual located at <https://flscns.fldoe.org/LinkUploads/SCNS%202019%20Handbook.pdf>.

FLORIDA COLLEGE SYSTEM CAREER CERTIFICATE PROGRAMS

As is the case with district postsecondary career certificate programs, the DCAE produces career certificate curriculum frameworks in 17 career clusters for the FCS. Again, these career certificate programs identify the minimum standards and benchmarks necessary to prepare for entry into employment as well as a standard program length. While the frameworks contain associated clock hour courses that FCS institutions may use to deliver the standards and benchmarks, state colleges are not required to enroll students in those courses. Unlike district career centers that are required to enroll students in the program's associated course numbers identified in the curriculum framework, state

colleges may use any career certificate level course (level 0) available in the SCNS to deliver the program's standards and benchmarks. Additionally, state colleges may request new SCNS career certificate level courses from the Office of Articulation directly.

More information on career certificate courses is available in the SCNS manual located at <https://flscns.fldoe.org/LinkUploads/SCNS%202019%20Handbook.pdf>.

FLORIDA COLLEGE SYSTEM LOWER DIVISION COLLEGE CREDIT PROGRAMS

The DCAE also produces college credit (ATD, CCC, AAS and AS) curriculum frameworks in 17 career clusters. These programs identify the minimum standards and benchmarks necessary to prepare for entry into employment as well as a standard program length. The frameworks do not identify SCNS courses; therefore, state colleges have the institutional autonomy to select SCNS lower-level undergraduate courses (level 1-2) to deliver the standards and benchmarks of the program, as well as SCNS courses to fulfill general education requirements (only applicable for AAS and AS degrees).

More information on lower-level undergraduate courses is available in the SCNS manual located at <https://flscns.fldoe.org/LinkUploads/SCNS%202019%20Handbook.pdf>

FLORIDA COLLEGE SYSTEM UPPER-DIVISION COLLEGE CREDIT PROGRAMS

The State Board of Education approves all baccalaureate degree offerings at FCS institutions as specified in section (s.) 1007.33, Florida Statutes (F.S.), and Rule 6A-14.095, Florida Administrative Code (F.A.C.). A critical component of this review is documentation of the local workforce demand for the degree. The proposal application includes detailed questions regarding prospective career

pathways and potential employment opportunities for graduates, and requires the applicant to address current supply, demand and unmet need for graduates. In addition, institutions must annually report on specified performance and compliance indicators.

DIGITAL TOOL CERTIFICATES AND INDUSTRY CERTIFICATIONS

The following definition of an industry certification is included in s. 1003.492(2), F.S. for K-12 implementation of the CAPE Act:

A voluntary process through which students are assessed by an independent, third-party certifying entity using predetermined standards for knowledge, skills, and competencies, resulting in the award of a credential that is nationally recognized and must be at least one of the following:

- (a) Within an industry that addresses a critical local or statewide economic need;*
- (b) Linked to an occupation that is included in the workforce system's targeted occupation list; or*
- (c) Linked to an occupation that is identified as emerging.*

Industry certifications may be used to meet certain requirements for high school graduation and earn college credits through an articulation agreement. The department has a very rigorous bar for certifications to be approved. The review process involves ensuring the certification has an aligned Standard Occupational Classification (SOC) code and is on a statewide demand occupation list. If it is not on the list, the department examines if the certification is linked to a targeted occupation sector. Furthermore, exams must always be proctored by a third party.

The State Board of Education annually adopts two industry certification lists in accordance with several provisions in Florida Statutes: the CAPE Industry

Certification Funding List (which includes digital tool certificates) and the CAPE Postsecondary Industry Certification Funding List. Different processes of review and approval are used for each of the lists.

CAPE INDUSTRY CERTIFICATION FUNDING LIST

For secondary CTE, the State Board of Education adopts industry certifications as part of an annual review and recommendation process. The department relies upon the expertise of CareerSource Florida and the Department of Economic Opportunity to identify industry certifications with employer demand. CareerSource conducts a submission process yearly to identify new industry certifications and the CareerSource Board annually adopts a list of recommended industry certifications. As part of the submission process, school districts or local workforce boards must submit letters of support from the following: industry/trade associations, economic development organizations and local workforce development boards. In order to submit a recommendation, labor market need for postsecondary industry certifications must be provided. For secondary, there simply needs to be a labor market need. For the 2019-20 list, 279 certifications and 19 digital tool certificates were adopted on the CAPE Industry Certification Funding list.

A separate process for industry certifications is used for the adoption of certifications related to farm occupations. For these programs, the department receives recommendations from the Florida Department of Agriculture and Consumer Services through an annual submission window.

For digital tool certificates, which are limited to elementary and middle grade students, the department conducts a competitive procurement to identify the best certificates. Under current law, a maximum of 30 digital tool certificates may be adopted by the State Board of Education.

CAPE POSTSECONDARY INDUSTRY CERTIFICATION FUNDING LIST

For the postsecondary list, the General Appropriations Act includes the list of occupations that serve as the basis for the list. The department identifies appropriate postsecondary level industry certifications annually and adopts the list in an administrative rule.

PROGRAM REVIEW PROCESS

According to section 1004.92, Florida Statutes, the department is to evaluate all statewide CTE programs every three years. This process is designed to both improve student learning outcomes of the state’s curriculum frameworks and identify those programs requiring deletion. Historically, the reason for deletion of a program is lack of sufficient enrollment. It has been the assumption that low enrollment is a reliable indicator of low market demand for the corresponding occupation. An additional way a program may be deleted is when a facilitated review determines the need for such substantial revisions the review justifies the creation a new program. Regulatory changes can also initiate the need for substantial revisions, perhaps due to a change in a rule or law that governs the occupation, such as the training or hours required. If the hours change, a new program is created. Table 2 provides a summary of program deletions since 2015-2016.

TABLE 2: FLORIDA CTE PROGRAM DELETIONS, 2015-2016 TO 2019-2020

PROGRAM TYPE	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Middle Grades Level	7	-	-	-	1

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High School Level	7	35	13	2	4
Career Certificate	20	39	11	49	13
ATD (clock-hour)	-	-	-	-	-
AAS	3	-	79	-	-
AS	25	2	9	6	-
CCC	10	6	1	7	12
ATD (credit-hour)	-	-	-	2	-
Total	72	82	113	66	30

Initiation for the “teaching-out” of a program can begin at either the state or local level, however. A teach-out plan is a written plan that provides for the equitable treatment of students if an institution terminates a program prior to students completing that program. When the state supervisors notice low enrollment, they will contact the institution and often the institution will have already started the teach-out process. Throughout this process, the program courses remain in the course code directory throughout the teach-out period.

For degree programs (AS/AAS), the typical deletion time is five years to account for part-time students during teach-out. For career certificate (clock hour) programs, the typical deletion time is two to three years, depending on the length of the program. If an institution has continued enrollment past the anticipation date, DCAE may extend the date to accommodate the request.

At the postsecondary institution level, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), in accordance with federal regulations, establishes the process institutions must follow once they make the decision to close a program. Specifically, “when the decision is made to

close an educational program, the institution must make a good faith effort to assist affected students, faculty, administrative and support staff so that they experience a minimal amount of disruption in the pursuit of their course of study or professional careers" (SACSCOC, 2014).

With the annual audit now in full effect, the program termination process will be enfolded into the audit's annual review.

CIP AND SOC ALIGNMENT

The department uses Classification of Instructional Programs (CIP) and Standard Occupational Classification (SOC) system codes to align programs with potential occupations. The CIP provides a taxonomic scheme used to classify all postsecondary fields of study including those leading to degrees and non-degree certificates. It supports the accurate tracking and reporting of fields of study and program completions. It was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980 and is updated every 10 years. Florida CIP codes are 10-digit codes with the six middle digits from the federal taxonomy established by NCES. The department adds two digits in front to denote career cluster and two digits at the end to indicate the specific program type. The last two digits are essentially a unique identifier. The CIP number is used by institutions for reporting enrollments and completions, among other uses. In short, a CIP code is a unique identifier of a program.

The SOC system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. SOC codes are six-digit codes provided by the Department of Labor. All workers are classified into one of the 840 detailed occupations according to their occupational definition. Just as CIPs are updated, SOCs are also revised by the U.S. Department of Labor to reflect changes in the economy

and the nature of work. DEO codes occupations to create SOC codes specific to Florida. Each program only has one CIP code. For alignment, every program is evaluated for a primary, or final, SOC code. This evaluation indicates the primary occupation for which program graduates are prepared. Programs can have multiple (secondary) SOC codes. There can be multiple CIPs to SOC codes and vice versa.

To date, baccalaureates have been excluded from the evaluation because the baccalaureate program approval process varies from the CTE curriculum framework processes. As such, baccalaureates do not have primary SOC codes. For purposes of the CTE audit, department staff developed a methodology for assigning a primary SOC code using baccalaureate proposal applications and analyzing education levels for occupations using DEO and Bureau of Labor Statistics methodologies.

SECTION 3:

METHODOLOGY

PROGRAMS

With the PQIs identified, the department's first step was to gather data for all secondary and postsecondary CTE programs. The DEO provided data for the market demand indicators. Department staff pulled data through PK-20 Education Reporting and Accessibility (PERA) and FETPIP on institutional indicators, for the most recent years where data were available. In total, the department began with 1,195 CTE programs. From the original 1,195 programs, 495 programs underwent statewide benchmarking. Seven-hundred (700) programs did not undergo statewide benchmarking:

- Career preparatory, technology education and postsecondary
 - » 169 programs were removed from analysis because these programs have been daggered for deletion, meaning they can no longer enroll new students within a certain period of time.
 - » 139 new programs that began enrolling students in 2016-17 or later did not undergo a review of institutional measures in this audit. Because these programs are new, institutional data on progress and outcomes are not yet available. Once data are available, these programs will be phased in the audit cycle. These programs were assessed for market demand.
 - » 233 active programs that did not have sufficient data (data unavailable on one or more institutional measures and/or counts of less than 10 students in the denominator of one or more institutional measures) to undergo benchmarking, even after combining three years of data for each indicator where sufficient data were not available. These programs were

- automatically sent for a local review of institutional performance.
- Middle grades, work-based learning/capstone and other CTE courses
 - » 159 programs were evaluated using a separate process. This figure includes 129 active and new courses/programs as well as 30 daggered courses/programs.

While these programs did not undergo the standard benchmarking process, they were still evaluated. New programs underwent a review of market demand. Active programs with insufficient data underwent a review of market demand and were reviewed for local institutional performance (Phase 2). Lastly, middle grades, work-based learning/capstone and other CTE courses were evaluated using a separate internal review process.

PROGRAM QUALITY INDICATORS

The initial step in the CTE audit process was identifying a set of PQIs that reflect what constitutes a high-quality state CTE program at the K-12 and postsecondary levels. These PQIs served as quality benchmarks by which each program was measured. Department staff developed the PQIs in collaboration with the advisory committee and three expert groups. Additionally, the department solicited feedback from the public on proposed PQIs for secondary and postsecondary CTE programs.

The final PQIs assess program quality through two lenses. First, what is the market demand for the program? These PQIs are intended to identify the extent to which there are data that support the demand for the program at statewide and regional levels. Second, how is the program performing? Programs were assessed based on their performance on key institutional measures of program quality that related to student progression and completion and post-completion outcomes. Market demand indicators were not used for most secondary CTE programs.

WORKFORCE INDICATORS

Data for these measures were collected from the DEO, Bureau of Labor Market Statistics.

- Indicator of whether the program trains for an occupation on the Statewide Demand Occupation List (DOL)
 - » This PQI is dichotomous, where “yes” indicates presence on the statewide DOL and “no” indicates absence on the statewide DOL. The statewide DOL identifies the labor market needs of Florida’s business community and encourages job training and postsecondary education based on those needs, with emphasis on jobs that are both high demand and high skill/high wage. Career preparatory and all postsecondary programs are assessed on this measure.
- Indicator of whether the program trains for an occupation on a Regional DOL
 - » This PQI is dichotomous, where “yes” indicates presence on any regional DOL and “no” indicates absence on any regional DOL. Regional workforce boards develop and use their regional DOLs to identify occupations for which eligible adults and dislocated workers may receive training assistance under the Workforce Innovation and Opportunity Act. Career preparatory and all postsecondary programs are assessed on this measure.
- Indicator of whether the final program SOC in the framework is linked to an occupation that is expected to grow over the next eight years
 - » This PQI is dichotomous, where “yes” indicates projected job growth from 2018 to 2026 meets one of the following: 1) 500 annual openings and annual growth rate of 1.26%; or 2) 1,200 annual openings and any positive growth rate. “No” indicates neither of these criteria were met. For each CTE program, department staff examined projected trends in job openings for the program’s primary SOC code. Career preparatory and all postsecondary programs are assessed on this measure.

- Indicator of whether the program trains for an occupation with middle to high wages
 - » This PQI is dichotomous, where “yes” indicates the program is aligned to an occupation leading to middle or high wages and “no” indicates the program does not lead to an occupation leading to middle or high wages. For each CTE program, department staff compared completer wages to the entry and mean wages for the program’s primary SOC code. A program leads to middle wages if completers’ entry and mean wages were greater than or equal to \$12.31 and \$15.13 per hour, respectively. A program leads to high wages if completers’ entry and mean wages were greater than or equal to \$15.13 and \$23.73 per hour, respectively. Career preparatory and all postsecondary programs are assessed on this measure.
- Indicator of whether the program trains for an area identified as an Enterprise Florida Targeted Sector
 - » This PQI is dichotomous, where “yes” indicates the program is aligned to an Enterprise Florida Targeted Sector and “no” indicates the program does not lead to an occupation in an Enterprise Florida Targeted Sector. The following are the targeted sectors: aviation and aerospace, life sciences, manufacturing, defense and homeland security, information technology, financial and professional services, logistics and distribution, and Cleantech. Technology education programs are assessed on this measure.

INSTITUTIONAL INDICATORS - SECONDARY

Data for these measures were collected from the Florida Department of Education, PERA and FETPIP. Table 3 reflects the PQIs associated with the secondary CTE program areas.

- Percent of students taking a middle grades (6-8) course who are found enrolled in a CTE course by 9th grade
 - » This PQI reflects the percentage of 8th graders taking a middle grades

- career preparatory course who transition into a career preparatory or technology education CTE course in the following year. Points are not assigned for this measure in benchmarking; all courses will undergo a detailed local review.
- Percent of students who earned an industry certification or digital tool certificate in the course
 - » This PQI reflects the percentage of students enrolled in middle grades CTE courses, work-based learning or capstone courses and other CTE courses/programs who earned an industry certification or digital tool certificate. Not all these courses have appropriate alignment for industry certifications. Points are not assigned for this measure in benchmarking; all courses/programs will undergo a detailed local review.
 - Percent of students with a program concentration (career preparatory and technology programs only)
 - » This PQI reflects the percentage of 12th grade students exiting the K-12 system who had earned credit in multiple courses in a single CTE program (three courses in programs with three or more courses; two courses for a two-course program). Department staff assigned points to each program by multiplying the calculated concentration rate by 10.
 - Percent of students who took a course in the program who earned an industry certification
 - » This PQI reflects the percentage of students taking a course in the career preparatory or technology education program who had earned an industry certification during the year. The industry certification earned did not have to be related to the program. Not all career preparatory and technology education programs have appropriate alignment for industry certifications. Department staff will assign bonus points for career preparatory and technology education programs (up to 2 points may be generated) as part of the local review process.
 - Percent of students taking the course who are also enrolled in career preparatory or technology education programs

- » This PQI reflects the percentage of students enrolled in certain CTE programs who are also enrolled in a career preparatory or technology education course over a multiple-year period. The indicator is calculated for work-based learning, capstone courses and other CTE courses. Points are not assigned for this measure in benchmarking; all courses/programs will undergo a detailed local review.
- Graduation rate of students with a program concentration
 - » This PQI is a four-year cohort graduation rate of students who were in program concentrators in the CTE program. Only standard diplomas are included in this measure. The indicator is calculated for career preparatory and technology education programs. Department staff assigned points to each program by multiplying the calculated graduation rate by 10.
- Graduation rate of students taking a course
 - » This PQI is a four-year cohort graduation rate of students who took certain CTE courses during their enrollment. Only standard diplomas are included in this measure. The indicator is calculated for work-based learning, capstone courses, and other CTE courses. Points are not assigned for this measure in benchmarking; all courses/programs will undergo a detailed local review.
- Percent of CTE concentrator graduates who transitioned into postsecondary education or employment after high school
 - » This PQI reflects the percentage of concentrator graduates who are found employed or continuing their education in the year following credential completion. Job placement or continuing education rates were calculated by dividing the annual number of students found employed or continuing education by the total annual number of students with a program completion record and a valid SSN. The indicator is calculated for career preparatory and technology education programs. Department staff assigned points to each program by multiplying the calculated transition rate by 10.
- Percent of graduates taking the course who transitioned into postsecondary education or employment after high school

- » This PQI reflects the percentage of graduates taking certain CTE courses during high school who are found employed or continuing their education in the year following credential completion. Job placement or continuing education rates were calculated by dividing the annual number of students found employed or continuing education by the total annual number of students with a program completion record and a valid SSN. The indicator is calculated for work-based learning, capstone courses and other CTE courses. Points are not assigned for this measure in benchmarking; all courses/programs will undergo a detailed local review.
- Average entry wage of CTE concentrator graduates
 - » This PQI reflects the annual earnings of CTE concentrator graduates. Average wages for those found employed in Florida after completion were provided by FETPIP as Average Annualized Wages Employed (Best Wage), which is calculated by averaging quarterly earnings using the highest quarterly wage found for an individual within the four quarters following graduation (July-September, October-December, January-March, April-June) and then annualizing it by multiplying it by four. The indicator is calculated for career preparatory and technology education programs. Points are not assigned for this measure in benchmarking; this information may be used during the local review process.
- Average entry wage of graduates taking a course in the program
 - » This PQI reflects the annual earnings of high school graduates who took a work-based learning, capstone or other CTE course. The methodology is the same as the calculation for career preparatory and technology education concentrator graduates. The indicator is calculated for work-based learning, capstone courses and other CTE courses. Points are not assigned for this measure in benchmarking; all programs/courses will undergo a detailed review using this information.

**TABLE 3: PQIS FOR CTE SECONDARY COURSES/
PROGRAMS**

Indicator	Middle Grades	Career Prep	Tech Ed	WBL/ Caps- tone	Other CTE
Whether the program trains for an occupation on the Statewide Demand Occupation List		√			
Whether the program trains for an occupation on the Regional Statewide Demand Occupation Lists		√			
Whether the final program SOC in the framework is linked to an occupation that is expected to grow over the next eight years		√			
Whether the program trains for an occupation with middle to high wages		√			
Whether the program trains for an area identified as an Enterprise Florida Targeted Sector			√		

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Indicator	Middle Grades	Career Prep	Tech Ed	WBL/Caps-tone	Other CTE
Percent of students taking a 6-8 course who are found enrolled in a CTE course by 9th grade*	√				
Percent of students who earned an industry certification or digital tool certificate in the course*	√	√	√	√	√
Percent of students with a program concentration		√	√		
Percent of students taking the course who are also enrolled in career preparatory or technology education programs				√	√
Graduation rate of students with a program concentration		√	√		
Graduation rate of students taking a course				√	√

Indicator	Middle Grades	Career Prep	Tech Ed	WBL/Caps-tone	Other CTE
Percent of CTE concentrator graduates who transitioned into postsecondary education or employment after high school		√	√		
Percent of graduates taking the course who transitioned into postsecondary education or employment after high school				√	√
Average entry wage of CTE concentrator graduates*		√	√		
Average entry wage of graduates taking a course in the program*				√	√

* Measure is included for qualitative review and is not included in the benchmark.

INSTITUTIONAL INDICATORS - POSTSECONDARY

Data for these measures were collected from the Florida Department of Education, PERA and FETPIP. All postsecondary CTE programs were evaluated on the same PQIs, summarized below.

- Retention rate
 - » This PQI reflects the percentage of students enrolled in a CTE program each year who are retained into the subsequent reporting year. For

example, the number of students enrolled in 2017-2018 who are retained into 2018-2019. The initial cohort includes all enrollments in a single reporting year (e.g., 2017-2018) and is not limited to first-time-in-college students. In order to account for shorter programs, students who complete their program within the year are also counted as retained. Points are assigned to each program by multiplying the calculated retention rate by 10 for a possible score of 0 to 10 points. All postsecondary programs are assessed on this measure.

- Student success rate
 - » This PQI reflects the percentage of students exiting their program of study with either a credential (degree or certificate), industry certification, or completing a terminal Occupational Completion Point (OCP). Success rates are calculated by dividing the number of students with any completion (degree or certificate, industry certification, or terminal OCP) from a cohort of students who were found enrolled in one year (e.g., 2017-2018) and not found enrolled in the subsequent year (e.g., 2018-2019). Points are assigned by multiplying the calculated retention rate by 10 for a possible score of 0 to 10 points. All postsecondary programs are assessed on this measure.
- Job placement or continuing education rate
 - » This PQI reflects the percentage of graduates who are found either employed or continuing their education in the year following program completion. The job placement or continuing education rate is calculated by dividing the annual number of students found employed or continuing education by the total annual number of students with a program completion record and a valid SSN. Points are assigned based on a continuous scale where a 50 percent rate is awarded 0 points and a 100 percent rate is awarded 10 points. All postsecondary programs are assessed on this measure.
- Average wages for those found employed in Florida after completion
 - » This PQI reflects the average annualized earnings of program completers in the first year after program completion. The average earnings of

program completers (based on 10-digit CIP codes) are compared to the average entry-level earnings of all Floridians employed in the occupation (based on SOC code) associated with the program. A percent difference between these two salaries is calculated. In other words, this PQI determines if program completers are earning the same, higher or lower annualized salaries than the entry-level annualized salaries of those employed in the occupation associated with the program of study. For example, if the average annualized salary of program completers is equal to the average annualized entry-level wages, there is a 0 percent difference. Points are awarded on a continuous scale such that a -40 percent difference is awarded 2.5 points and a +20 percent difference is awarded 10 points. Note, all programs that have less than a -40 percent difference are awarded 0 points. All programs that have higher than a +20 percent difference are awarded 10 points. All postsecondary programs are assessed on this measure.

During the process of gaining stakeholder feedback, there were several PQIs identified for which the department could not readily collect data. As a result of limitations with data collection, these indicators were tabled for the 2019-2020 audit. At the postsecondary level, they include 1) passage rates for licensure exams; 2) number of industry certifications earned in the program; and 3) return on investment. Recognizing the importance of these measures, department staff will work to include them in future audits.

CTE AUDIT PHASE OVERVIEW

PHASE 1: STATEWIDE PROGRAM REVIEW

In this phase, the department conducted an analysis of quality, using statewide data, based on PQIs identified for active CTE secondary and postsecondary programs. The unit of analysis was statewide programs where each program was counted once. For example, all Associate in Science in Nursing (ASN) programs were counted as one program. Figure 4 is a visualization of the audit decision tree.

- STEP 1 The department identified the scope of programs included in the 2019-2020 audit cycle.
- STEP 2 The department reviewed market demand data for all new and active programs, if applicable, and made a determination regarding whether or not programs met market demand benchmarks (dichotomous – yes or no). Programs that did not receive a “yes” were marked for local review of local or industry need.
- STEP 3 a) For active/insufficient programs, the department grouped three years of data for each institutional indicator that did not meet the sufficiency criteria. If, after combining three years of data, the programs still did not meet the sufficiency criteria, the programs remained “active/insufficient,” and were marked for a local review of institutional performance.

b) For active/sufficient programs and programs that became sufficient through combining three years of data, the department assigned points based on the program's performance on institutional benchmarks. Programs in the bottom quartile were marked for local review of institutional performance.

c) As part of the review of the five different types of secondary CTE courses and programs, the following categories of programs were placed through an internal review process conducted by DCAE staff: middle grades career exploratory; work-based learning and capstone courses; and other CTE courses. All course types have program quality indicators identified but will not be benchmarked using a points scale. These courses underwent a comprehensive review based on the core purpose of the course. The department developed a review matrix for all the courses in these categories, and included the following considerations:

- Is the course being used as described in the state curriculum framework?
- Is the course part of a program of study pathway?
- Does unnecessary duplication of courses need to be addressed by combining or eliminating courses?

PHASE 2: LOCAL REVIEWS

In this phase, the department looked deeper into each program at each institution for programs not meeting the statewide benchmarks. For example, assuming all 28 FCS institutions offer ASN programs and ASN programs did not meet statewide demand, all 28 programs were evaluated at the local level.

- STEP 4 The department sent templates to all institutions that offer programs progressing to local reviews. There were two local templates:
- Market Demand Template
 - Institutional Performance Template
- STEP 5 Institutions with programs that progressed to local review returned completed templates to the department.
- STEP 6 The department convened a team of DCAE and Division of Florida Colleges (DFC) reviewers to evaluate local reviews of secondary and postsecondary programs. The review team were provided all data collected through the statewide and local reviews to inform the process.
- STEP 7 DCAE and DFC senior leadership developed recommendations for action on programs based on the local reviews of market demand and institutional performance.
- STEP 8 Commissioner of Education will make recommendations to the governor regarding the strengthening or creation of CTE programs in addition to recommendations for the elimination of CTE offerings that are not aligned to market demands.

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT: Results from Statewide Review of Programs

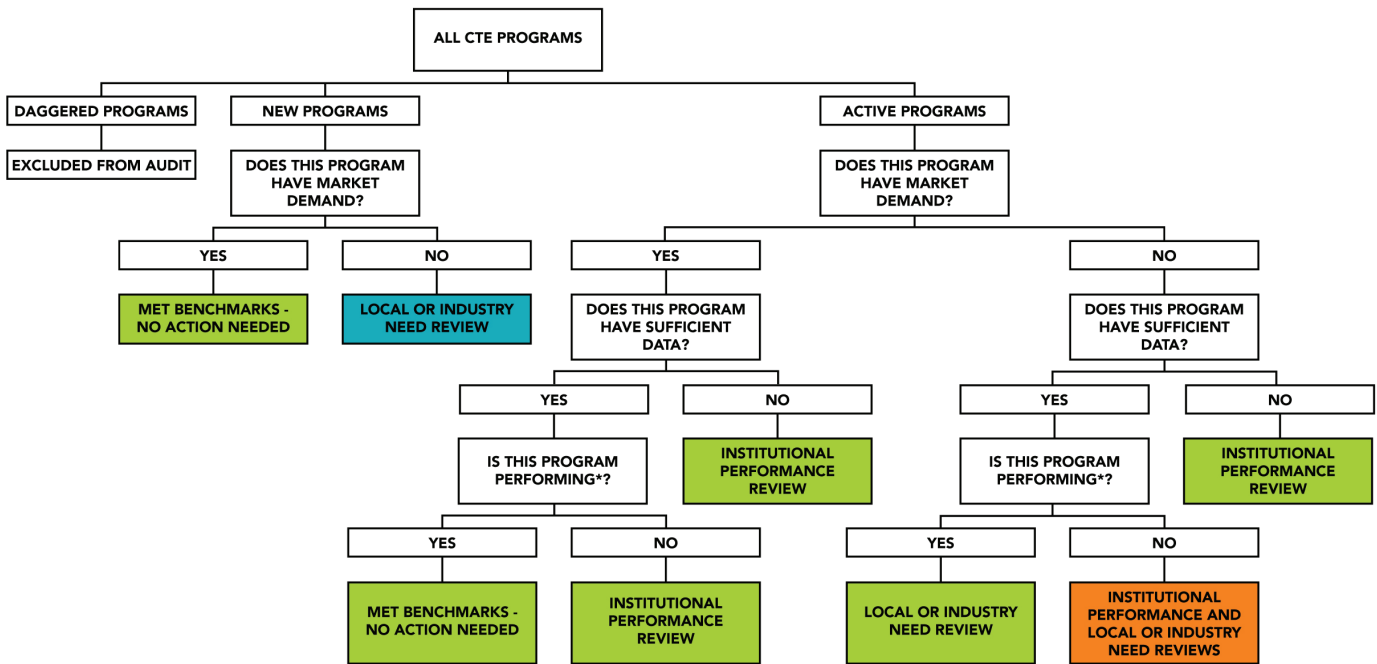


Figure 4: CTE Audit Decision Tree

After combining three years of program data, it is possible for programs that were initially insufficient to move into the sufficient category; in these cases, the programs will undergo the same review as active/sufficient programs.

PHASE 3: SHARE INFORMATION AND BEST PRACTICES

Using the data and information collected through phases 1 and 2, the department identified best practices that were learned through the first year of the CTE audit. These best practices pertain to how institutions can improve their local level review of CTE programs. By enhancing the local level review process, institutions can better understand which programs are low performing and need either improvement or termination at the local level. These best practices are discussed in detail in Section 6 of this report and include evaluating programs with multiple measures (data points), reviewing programs using mixed methods (quantitative and qualitative data), analyzing data trends over time and developing targeted improvement plans.

The next section (Section 4) of the report contains results from the statewide reviews of programs disaggregated by educational level (secondary and postsecondary) and by career cluster based on the analysis of workforce and institutional indicators. Active programs with sufficient data were categorized in one of the four quadrants pictured in Figure 5.

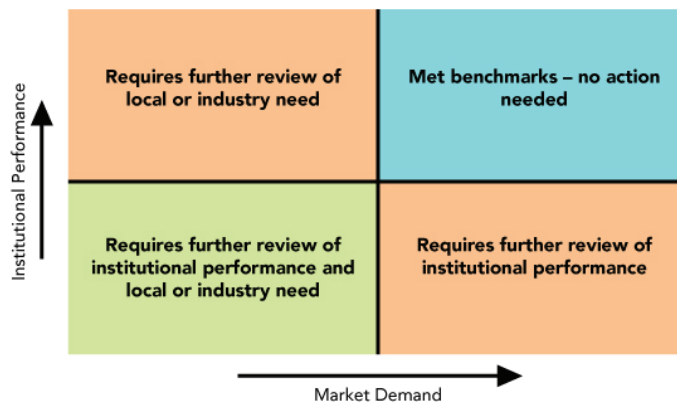


Figure 5: CTE Audit: Plotting Program Performance

SECTION 4: STATEWIDE PROGRAM REVIEW RESULTS (PHASE 1)

SECONDARY STATEWIDE RESULTS

CAREER PREPARATORY AND TECHNOLOGY EDUCATION

The 89 secondary CTE programs with sufficient data underwent a two-step process to evaluate program quality as shown in Figure 4.² In the first step, each program was assessed for market demand. Market demand for career preparatory programs was met with the following indicators:

- the program trains for an occupation on the Statewide Demand Occupation List (DOL);
- the program trains for an occupation on regional DOLs;
- the occupation is expected to grow over the next eight years; or
- the program trains for an occupation with middle to high wages.

For technology education programs, the program frameworks do not include SOC codes for analysis. Technology education programs are not career preparatory in nature but rather provide broad foundational knowledge and

² The 89 secondary programs that went for the complete Phase 1 review of both institutional performance and market demand do not include “new” programs or programs with insufficient enrollment data to evaluate institutional performance at the state level.

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT: Results from Statewide Review of Programs

skills in fields that generally require a baccalaureate degree such as engineering. As such, they do not contain SOC codes. Therefore, the programs were evaluated for their linkage to an Enterprise Florida Targeted Industry.

Programs that did not meet any of the workforce PQIs did not demonstrate market demand using statewide indicators; these programs required further review of local market demand.

Second, each program was assessed for performance. In determining performance on institutional PQIs, each program had the opportunity to receive 30 points, where each institutional measure had a value of 10 points.

Institutions that had total points greater than 20.03 demonstrated quality program performance. Programs with total points at or below 20.03 did not demonstrate quality performance using statewide indicators; these programs require further review of institutional performance.

Figure 6 provides a summary of secondary results. The statewide review found:

- The majority (62 percent) of secondary CTE programs met benchmarks on market demand if applicable, and institutional performance.
- Nearly one-third (30 percent) of secondary CTE programs did not meet benchmarks on institutional performance but did meet benchmarks on market demand.
- Six secondary CTE programs did not meet benchmarks on market demand but did meet institutional performance benchmarks.
- One secondary CTE programs had low market demand and low institutional performance.

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT: Results from Statewide Review of Programs

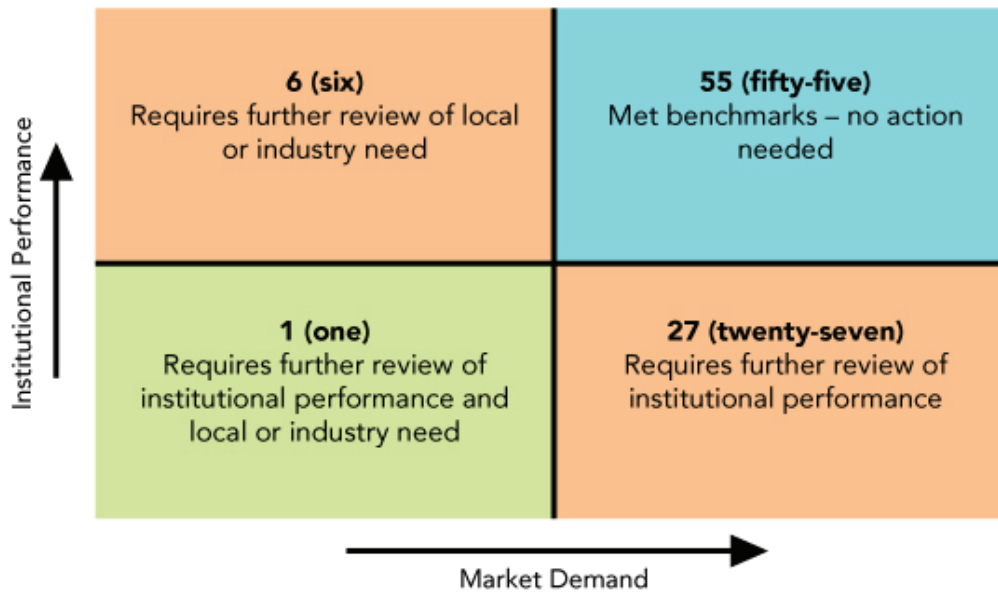


Figure 6: CTE Audit: Secondary Results (n=89)

In sum, there were 89 secondary career preparatory and technology education programs that were evaluated on both institutional performance and on market demand as part of the Phase 1 statewide analysis. There were also 22 career preparatory and technology education programs that were “new” and therefore were not the complete Phase 1 analysis; two of these programs did not meet the market benchmark and required further review of local or industry need. Additionally, there were 41 career preparatory and technology education programs that had insufficient data to evaluate institutional performance in Phase 1 and required a review of local institutional performance (of those 41 programs, five programs also required further review of local or industry need).

The lists below reflect the 89 programs that were evaluated on institutional performance and market demand, the 41 programs with insufficient data, and the two new programs that did not meet market demand in Phase 1.

SECONDARY PROGRAMS – MET BENCHMARKS

Career Cluster	Program Type	Title
Agriculture, Food, and Natural Resources	Career Prep	Agricultural Sales and Services (8116000)
Agriculture, Food, and Natural Resources	Career Prep	Agriculture Biotechnology (8003100)
Agriculture, Food, and Natural Resources	Career Prep	Animal Science and Services (8106200)
Agriculture, Food, and Natural Resources	Career Prep	Food Science Applications (8129200)
Agriculture, Food, and Natural Resources	Career Prep	Horticulture Science and Services (8121600)
Agriculture, Food, and Natural Resources	Career Prep	Landscape Operations (8002100)
Agriculture, Food, and Natural Resources	Career Prep	Veterinary Assisting (8115110)
Architecture & Construction	Career Prep	Air Conditioning, Refrigeration and Heating Technology (8723000)
Architecture & Construction	Career Prep	Architectural Drafting (8101100)
Architecture & Construction	Career Prep	Building Construction Technologies (8720300)
Architecture & Construction	Career Prep	Drafting (8725000)
Architecture & Construction	Career Prep	Electricity (8727200)
Arts, A/V Technology & Communication	Career Prep	3 D Animation Technology (8718100)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	Career Prep	Commercial Art Technology (8718000)
Arts, A/V Technology & Communication	Career Prep	Digital Cinema Production (8201000)
Arts, A/V Technology & Communication	Career Prep	Journalism (8771100)
Business Management and Administration	Career Prep	Accounting Applications (8302100)
Business Management and Administration	Career Prep	Business Management and Analysis (8301100)
Business Management and Administration	Career Prep	International Business (8216100)
Business Management and Administration	Career Prep	Legal Administrative Specialist (8212000)
Business Management and Administration	Career Prep	Medical Administrative Specialist (8212300)
Education & Training	Career Prep	Early Childhood Education (8405100)
Engineering and Technology Education	Tech Ed	Communications Technology (8601000)
Engineering and Technology Education	Tech Ed	Engineering Pathways (9400300)
Engineering and Technology Education	Tech Ed	Power and Energy Technology (8601300)
Finance	Career Prep	Finance (8815100)
Finance	Career Prep	Global Finance (8515300)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Government & Public Administration	Career Prep	Emergency Planning and Response (8602000)
Health Science	Career Prep	Allied Health Assisting (8417130)
Health Science	Tech Ed	Biomedical Sciences (8708100)
Health Science	Career Prep	Dental Aide (8417140)
Health Science	Career Prep	Electrocardiograph Aide (8417160)
Health Science	Career Prep	Electrocardiograph Technician (8427100)
Health Science	Career Prep	Exercise Science (8417000)
Health Science	Career Prep	Health Unit Coordinator (8417280)
Health Science	Career Prep	Home Health Aide (8417190)
Health Science	Career Prep	Medical Laboratory Assisting (8417200)
Health Science	Career Prep	Nursing Assistant (Acute and Long-Term Care) (8417210)
Health Science	Career Prep	Pharmacy Technician (8418200)
Health Science	Career Prep	Vision Care Assisting (8417230)
Hospitality & Tourism	Career Prep	Culinary Arts (8800500)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Human Services	Career Prep	Cosmetology (8905100)
Human Services	Career Prep	Nails Specialty (8757300)
Information Technology	Career Prep	Computer Systems & Information Technology (CSIT) (9001200)
Information Technology	Career Prep	Digital Media Technology (9005100)
Information Technology	Career Prep	Game/Simulation/ Animation Programming (8208300)
Information Technology	Career Prep	Game/Simulation/ Animation Visual Design (8208100)
Information Technology	Career Prep	Technology Support Services (9001400)
Law, Public Safety & Security	Career Prep	Criminal Justice Operations (8918000)
Law, Public Safety & Security	Career Prep	Introduction to Fire Fighting (8918200)
Manufacturing	Career Prep	Industrial Biotechnology (8736000)
Marketing, Sales & Services	Career Prep	Customer Service Representative (8848100)
Marketing, Sales & Services	Career Prep	Fashion Marketing (8806000)

Career Cluster	Program Type	Title
Marketing, Sales & Services	Career Prep	Marketing, Management and Entrepreneurial Principles (9200500)
Transportation, Distribution & Logistics	Career Prep	Automotive Maintenance and Light Repair (9504100)

SECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF LOCAL OR INDUSTRY NEED

Career Cluster	Program Type	Title
Agriculture, Food, and Natural Resources	Career Prep	Agricultural Communications (8117000)
Agriculture, Food, and Natural Resources	Career Prep	Equestrian Studies (8004200)**
Arts, A/V Technology & Communication	Career Prep	Commercial Photography Technology (8772000)
Arts, A/V Technology & Communication	Career Prep	Digital Audio Production (8772300)
Arts, A/V Technology & Communication	Career Prep	Fashion Technology and Design Services (8506400)
Arts, A/V Technology & Communication	Career Prep	Interior Design Services (8506500)
Health Science	Career Prep	Emergency Medical Responder (8417170)
Transportation, Distribution & Logistics	Career Prep	Motorcycle Service Technologies (9540500)**

** Indicates a new program.

SECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF INSTITUTIONAL PERFORMANCE

Career Cluster	Program Type	Title
Agriculture, Food, and Natural Resources	Career Prep	Agritechnology (8106800)
Agriculture, Food, and Natural Resources	Career Prep	Aquaculture (8004100)*
Agriculture, Food, and Natural Resources	Career Prep	Environmental Water & Reclamation Technology (8007300)*
Agriculture, Food, and Natural Resources	Career Prep	Floral Design and Marketing (8012100)*
Agriculture, Food, and Natural Resources	Career Prep	Forestry (8118300)
Agriculture, Food, and Natural Resources	Career Prep	Principles of Agribusiness and Management (8009100)*
Agriculture, Food, and Natural Resources	Career Prep	Technical Agriculture Operations (8005100)
Architecture & Construction	Career Prep	Brick and Block Masonry (8722900)*
Architecture & Construction	Career Prep	Building Trades and Construction Design Technology (8722000)
Architecture & Construction	Career Prep	Cabinetmaking (8104400)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	Career Prep	Civil Engineering Aide (8915000)*
Architecture & Construction	Career Prep	Painting and Decorating (8721500)*
Architecture & Construction	Career Prep	Structural Drafting (8101200)*
Arts, A/V Technology & Communication	Career Prep	Digital Design (8209600)
Arts, A/V Technology & Communication	Career Prep	Digital Media/Multimedia Design (8201200)
Arts, A/V Technology & Communication	Career Prep	Telecommunications Technology (8730200)*
Business Management and Administration	Career Prep	Administrative Office Specialist (8212500)
Business Management and Administration	Career Prep	Customer Assistance Technology (8218100)
Business Management and Administration	Career Prep	Electronic Business Enterprise (8200300)
Business Management and Administration	Career Prep	Promotional Enterprise (8217100)
Education & Training	Career Prep	Principles of Teaching (8909000)
Energy	Career Prep	Energy Generation Technician (9700200)*
Energy	Career Prep	Energy Technician (9700300)*
Energy	Career Prep	Solar Energy Technology (8006100)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Engineering and Technology Education	Tech Ed	Aerospace Technologies (8600080)
Engineering and Technology Education	Tech Ed	Applied Engineering Technology (8401100)*
Engineering and Technology Education	Tech Ed	Applied Robotics (9410100)*
Engineering and Technology Education	Tech Ed	Electronics Technology (8600900)*
Engineering and Technology Education	Tech Ed	Maritime Technology (8404100)*
Engineering and Technology Education	Tech Ed	Materials and Processes Technology (8601100)
Engineering and Technology Education	Tech Ed	Production Technology (8604000)
Engineering and Technology Education	Tech Ed	Scientific Visualization (9400100)*
Engineering and Technology Education	Tech Ed	Technical Design (8401000)*
Engineering and Technology Education	Tech Ed	Technology Studies (8600100)
Engineering and Technology Education	Tech Ed	Transportation Technology (8601200)
Health Science	Career Prep	Dental Laboratory Assisting (8417150)*
Human Services	Career Prep	Dry Cleaning and Laundering (8733000)*
Human Services	Career Prep	Facials Specialty (8757400)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Information Technology	Career Prep	.NET Application Development and Programming (9007400)*
Information Technology	Career Prep	Applied Cybersecurity (9001300)*
Information Technology	Career Prep	Applied Information Technology (9003400)
Information Technology	Career Prep	Business Computer Programming (8206500)
Information Technology	Career Prep	Database and Programming Essentials (8206400)
Information Technology	Career Prep	Database Application Development & Programming (9007300)*
Information Technology	Career Prep	Game/Simulation/ Animation Audio/Video Effects (8208200)
Information Technology	Career Prep	Geospatial/Geographic Information System (GIS) Technology (8600200)*
Information Technology	Career Prep	Java Development & Programming (9007200)*
Information Technology	Career Prep	Modeling and Simulation (9005200)*
Information Technology	Career Prep	Network Support Services (8208000)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Information Technology	Career Prep	Network Systems Administration (8207440)
Information Technology	Career Prep	Web Application Development & Programming (9007500)*
Information Technology	Career Prep	Web Development (9001100)
Law, Public Safety & Security	Career Prep	Private Security Officer (8918031)*
Law, Public Safety & Security	Career Prep	Public Safety Telecommunication (9101000)*
Manufacturing	Career Prep	Machining Technology (9202100)*
Manufacturing	Career Prep	Welding Technology Fundamentals (9204400)*
Marketing, Sales & Services	Career Prep	E-Commerce Marketing (8827200)
Marketing, Sales & Services	Career Prep	Entrepreneurship (8812100)
Marketing, Sales & Services	Career Prep	International Marketing (8839100)*
Marketing, Sales & Services	Career Prep	Sport, Recreation, and Entertainment Marketing (8827400)
Transportation, Distribution & Logistics	Career Prep	Commercial Fishing (8751200)*

Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	Career Prep	Global Logistics and Supply Chain Technology (9503100)
Transportation, Distribution & Logistics	Career Prep	Outboard Marine Service Technology (9504200)*

* Indicates programs that did not have sufficient data for institutional performance indicators

SECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF LOCAL OR INDUSTRY NEED AND INSTITUTIONAL PERFORMANCE

Career Cluster	Program Type	Title
Agriculture, Food, and Natural Resources	Career Prep	Natural Resources (8006200)*
Arts, A/V Technology & Communication	Career Prep	Digital Photography Technology (8201300)*
Business Management and Administration	Career Prep	Court Reporting Technology (8306100)*
Human Services	Career Prep	Barbering (8757100)
Transportation, Distribution & Logistics	Career Prep	Mobile Electronics Technology (9540400)*
Transportation, Distribution & Logistics	Career Prep	Power Equipment Technology (9504500)*

* Indicates programs that did not have sufficient data for institutional performance indicators.

SECONDARY PROGRAMS – MIDDLE GRADES, WBL/ CAPSTONE, AND OTHER CTE

The 159 secondary CTE courses and programs classified as middle grades, work-based learning/capstone and other CTE went through a statewide review process. While these courses/programs were not benchmarked, the PQI data was used to review the current performance of students taking these courses and programs.

All programs were reviewed and evaluated internally based on the following questions:

- Are the courses being used as intended?
- Is the course part of a career cluster? Is it part of a career pathway to a high school CTE program?
- Does the course have a significant percentage of standards that are part of other courses (either in a CTE program or not)?
- Should the course be incorporated into an existing high school CTE program framework?
- What is the current utilization of these courses?

The comprehensive internal evaluation, completed in the fall of 2020, yielded internal recommendations ranging from course and program restructure to consolidation to deletion. The next step in the process will be to engage a panel of external stakeholders to review and approve internal recommendations in early 2021. Some recommendations may be implemented in 2021-2022 whereas others may not be able to be implemented until 2022-2023.

POSTSECONDARY STATEWIDE RESULTS

The 406 active postsecondary CTE programs underwent a two-step process to evaluate program quality as shown in Figure 6. First, each program was assessed for market demand. Institutions that were found to have market demand met at least one of the four workforce PQIs:

- the program trains for an occupation on the Statewide Demand Occupation List (DOL);
- the program trains for an occupation on at least one regional DOL;
- the program trains for an occupation that is projected to have high annual growth over the next eight years; or
- the program trains for an occupation with middle to high wages.

Programs that did not meet any of the workforce PQIs did not demonstrate market demand using statewide indicators; these programs required further review of local market demand.

Second, each program was assessed for performance. In determining performance on institutional PQIs. Each program had the opportunity to receive 40 points, where each of the four institutional PQI measures had a maximum value of 10 points. Institutions that had total points of 25.31 or higher demonstrated program performance. Programs with total points below 25.31 did not demonstrate performance using statewide indicators; these programs require further review of institutional performance. Programs that had insufficient data were automatically referred for review of institutional performance. Figure 7 provides a summary of secondary results. The statewide review found:

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT: Results from Statewide Review of Programs

- The majority (69 percent) of postsecondary CTE programs met benchmarks on market demand and institutional performance.
- One-fourth (26 percent) of postsecondary CTE programs did not meet benchmarks on institutional performance but did meet benchmarks on market demand.
- Eleven postsecondary CTE programs did not meet market demand benchmarks but did meet institutional performance benchmarks.
- Eleven postsecondary CTE programs had low market demand and low institutional performance.

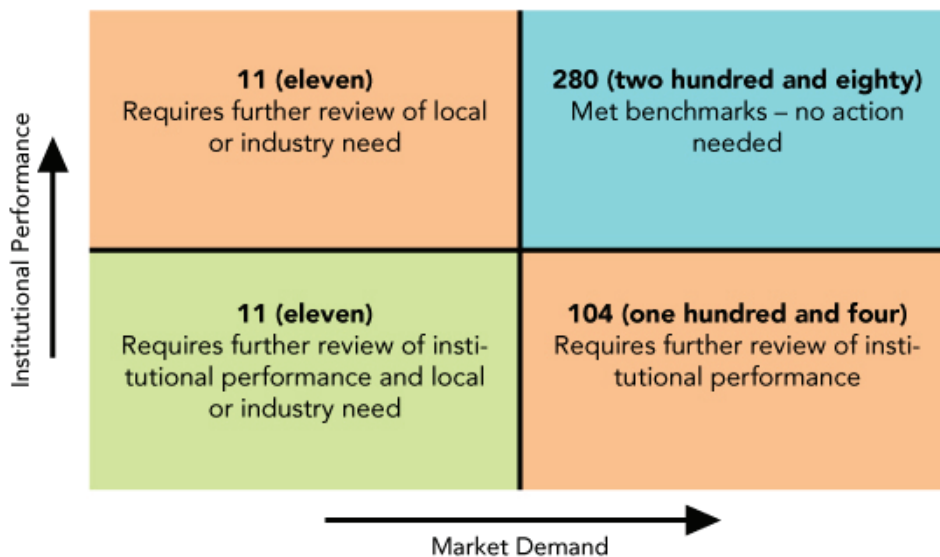


Figure 7: CTE Audit: Postsecondary Results (n= 406)

In sum, there were 406 postsecondary CTE programs that were evaluated on both institutional performance and on market demand as part of the Phase 1 statewide analysis. There were also 139 postsecondary CTE programs that were new and therefore not part of the complete phase analysis but were assessed for market demand. Additionally, 154 postsecondary programs that had insufficient data to evaluate institutional performance in Phase 1 and required a review of local institutional performance.

The lists below reflect the 406 programs that were evaluated on institutional performance and market demand, the 154 programs with insufficient data, and the new programs that did not meet market demand in phase 1.

POSTSECONDARY PROGRAMS – MET BENCHMARKS

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	AS/AAS	Golf Course Operations (1101060701)
Agriculture, Food & Natural Resources	AS/AAS	Landscape & Horticulture Technology (1101060502)
Agriculture, Food & Natural Resources	AS/AAS	Veterinary Technology (1351080800)
Agriculture, Food & Natural Resources	Career Cert	Veterinary Assisting (0151080810)
Agriculture, Food & Natural Resources	CCC	Hazardous Materials Specialist (0703010403)
Agriculture, Food & Natural Resources	CCC	Landscape & Horticulture Professional (0101060504)
Agriculture, Food & Natural Resources	CCC	Landscape & Horticulture Specialist (0101060503)
Agriculture, Food & Natural Resources	CCC	Landscape & Horticulture Technician (0101060505)
Agriculture, Food & Natural Resources	CCC	Water Quality Technician (0703010404)
Architecture & Construction	APPR	Air Conditioning, Refrigeration and Heating Technology - APPR (0847020103)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	APPR	Building Construction Technologies - APPR (0846041502)
Architecture & Construction	APPR	Carpentry - APPR (0846020105)
Architecture & Construction	APPR	Electrician - APPR (0846030204)
Architecture & Construction	APPR	Elevator Constructor Mechanic - APPR (0847030301)
Architecture & Construction	APPR	Fire Sprinkler System Technology - APPR (0846050202)
Architecture & Construction	APPR	Industrial Pipefitter - APPR (0846050303)
Architecture & Construction	APPR	Plumbing Technology - APPR (0846050302)
Architecture & Construction	APPR	Structural Steel Work - APPR (0848051100)
Architecture & Construction	AS/AAS	Air Conditioning, Refrigeration and Heating Systems Technology (0615050100)
Architecture & Construction	AS/AAS	Civil Engineering Technology (1715020101)
Architecture & Construction	AS/AAS	Computer-Aided Drafting and Design (1615130102)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	Bachelor's	Architectural Engineering Technology (1101501011)
Architecture & Construction	Bachelor's	Construction (1101510012)
Architecture & Construction	Bachelor's	Interior Design (1105004083)
Architecture & Construction	Career Cert	Air Conditioning, Refrigeration and Heating Technology 1 (0647020107)
Architecture & Construction	Career Cert	Air Conditioning, Refrigeration and Heating Technology 2 (0647020108)
Architecture & Construction	Career Cert	Air Conditioning, Refrigeration and Heating Technology (0647020106)
Architecture & Construction	Career Cert	Electrician (0646030204)
Architecture & Construction	Career Cert	Electricity (0646030202)
Architecture & Construction	CCC	Advanced Computer-Aided Design Technical Certificate (0615130101)
Architecture & Construction	CCC	Building Construction Specialist (0615100103)
Architecture & Construction	CCC	Computer-Aided Design Technical Certificate (0615130204)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	CCC	Sustainable Design (0630330106)
Arts, A/V Technology & Communication	AS/AAS	Radio and Television Broadcast Programming (1610020202)
Arts, A/V Technology & Communication	Bachelor's	Converged Communications (1100901021)
Arts, A/V Technology & Communication	Bachelor's	Digital Media (1101003041)
Arts, A/V Technology & Communication	CCC	Audio Technology (0650060209)
Arts, A/V Technology & Communication	CCC	Cable Installation (0647010304)
Arts, A/V Technology & Communication	CCC	Digital Media/Multimedia Instructional Technology (0609070211)
Arts, A/V Technology & Communication	CCC	Graphic Design Support (0611080302)
Arts, A/V Technology & Communication	CCC	Interactive Media Support (0650010203)
Arts, A/V Technology & Communication	CCC	Network Communications (WAN) (0611100207)
Arts, A/V Technology & Communication	CCC	Television Studio Production (0610010513)
Arts, A/V Technology & Communication	CCC	Video Editing & Post Production (0609040217)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	CCC	Wireless Communications (0615030508)
Business Management & Administration	AS/AAS	Accounting Technology (1552030201)
Business Management & Administration	AS/AAS	Office Administration (1552020401)
Business Management & Administration	Bachelor's	Business Administration (1105202011)
Business Management & Administration	Bachelor's	Business and Information Management (1105212011)
Business Management & Administration	Bachelor's	Healthcare Management (1105107011)
Business Management & Administration	Bachelor's	Organizational Management (1105202991)
Business Management & Administration	Career Cert	Accounting Operations (0552030202)
Business Management & Administration	Career Cert	Medical Administrative Specialist (0551071603)
Business Management & Administration	CCC	Accounting Technology Management (0552030205)
Business Management & Administration	CCC	Accounting Technology Operations (0552030203)
Business Management & Administration	CCC	Accounting Technology Specialist (0552030204)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Business Management & Administration	CCC	Business Entrepreneurship (0552070308)
Business Management & Administration	CCC	Business Operations (0552020104)
Business Management & Administration	CCC	Business Specialist (0552020103)
Business Management & Administration	CCC	Medical Office Management (0551071605)
Business Management & Administration	CCC	Office Management (0552020401)
Business Management & Administration	CCC	Office Specialist (0552040704)
Business Management & Administration	CCC	Office Support (0552020403)
Education & Training	APPR	Early Childhood Education - APPR (0819070910)
Education & Training	Bachelor's	Early Childhood Education, Age 3 through Grade 3 and Birth through Age 4 (1101312103)
Education & Training	Bachelor's	Early Childhood Education, Birth through Age 4; non-certification (1101312102)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Education & Training	Bachelor's	Early Childhood Education, Pre-K through Grade 3 (1101312101)
Education & Training	Bachelor's	Elementary Education (1101312021)
Education & Training	Bachelor's	Exceptional Student Education (1101310011)
Education & Training	Bachelor's	Middle Grades Mathematics Education (1101313112)
Education & Training	Bachelor's	Middle Grades Science Education (1101313165)
Education & Training	Bachelor's	Secondary Biology Education (1101313221)
Education & Training	Bachelor's	Secondary English Education (1101313051)
Education & Training	Bachelor's	Secondary Mathematics Education (1101313111)
Education & Training	Career Cert	Child Care Center Operations (0419070802)
Education & Training	Career Cert	Principles of Teaching (0713129902)
Education & Training	Career Cert	School Age Certification Training/*School Age Professional Certificate (0419070914)
Education & Training	CCC	Child Development Early Intervention (0419070904)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Education & Training	CCC	Educational Assisting (0713150100)
Education & Training	CCC	Infant/Toddler Specialization (0419070907)
Education & Training	CCC	Preschool Specialization (0419070908)
Energy	APPR	Electrical Line Service and Repair - APPR (0846030300)
Energy	AS/AAS	Electrical Power Technology (1615030318)
Energy	Bachelor's	Sustainability Management (1100302991)
Energy	Career Cert	Electrical Line Service and Repair (0646030300)
Energy	Career Cert	Solar Photovoltaic System Design, Installation and Maintenance - Entry Level (0615050502)
Energy	Career Cert	Turbine Generator Maintenance, Inspection and Repair (0715050304)
Finance	Bachelor's	Accounting (1105203011)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Finance	Bachelor's	Financial Services (1105208031)
Finance	Career Cert	Insurance Claims Adjuster (0252190806)
Finance	Career Cert	Insurance Customer Service Representative (0252190807)
Finance	Career Cert	Insurance General Lines Agent (0252190805)
Finance	CCC	Banking Operations- Financial Services (0252080302)
Finance	CCC	Banking Specialist- Financial Services (0252080303)
Government & Public Administration	Bachelor's	Public Administration (1104404011)
Government & Public Administration	Career Cert	Public Works (0615050600)
Government & Public Administration	CCC	Homeland Security Emergency Manager (0743030202)
Health Science	AS/AAS	Cardiovascular Technology (1351090100)
Health Science	AS/AAS	Dental Assisting Technology and Management (1351060104)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Health Science	AS/AAS	Dental Hygiene (1351060200)
Health Science	AS/AAS	Diagnostic Medical Sonography Technology (1351091004)
Health Science	AS/AAS	Emergency Medical Services (1351090402)
Health Science	AS/AAS	Funeral Services (1312030100)
Health Science	AS/AAS	Health Information Technology (1351070700)
Health Science	AS/AAS	Histologic Technology (1351100800)
Health Science	AS/AAS	Medical Laboratory Technology (1351100405)
Health Science	AS/AAS	Nuclear Medicine Technology (1351090502)
Health Science	AS/AAS	Nursing R.N. (1351380100)
Health Science	AS/AAS	Ophthalmic Technician (1351180301)
Health Science	AS/AAS	Opticianry (1351180100)
Health Science	AS/AAS	Pharmacy Management (1351080502)
Health Science	AS/AAS	Physical Therapist Assistant (1351080601)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Health Science	AS/AAS	Radiation Therapy (1351090701)
Health Science	AS/AAS	Radiography (1351090700)
Health Science	AS/AAS	Respiratory Care (1351090800)
Health Science	AS/AAS	Surgical Services (1351000002)
Health Science	ATD	Dental Assisting Technology and Management - ATD (0351060113)
Health Science	ATD	Dental Assisting Technology and Management -ATD (0351060108)
Health Science	ATD	Medical Clinical Laboratory Technician - ATD (0351100404)
Health Science	ATD	Medical Coder/Biller--ATD (0351070715)
Health Science	ATD	Pharmacy Technician ATD (0351080507)
Health Science	ATD	Pharmacy Technician -ATD (0351080503)
Health Science	Bachelor's	Applied Health Sciences (1105122111)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Health Science	Bachelor's	Biomedical Sciences (1102601021)
Health Science	Bachelor's	Cardiopulmonary Sciences (1105109081)
Health Science	Bachelor's	Clinical Laboratory Science (1105110051)
Health Science	Bachelor's	Dental Hygiene (1105106021)
Health Science	Bachelor's	Health Science with an Option in Physician Assistant Studies (1105100002)
Health Science	Bachelor's	Nursing (1105138012)
Health Science	Bachelor's	Orthotics and Prosthetics (1105123071)
Health Science	Bachelor's	Radiologic and Imaging Sciences (1105109071)
Health Science	Career Cert	Dental Assisting (0351060112)
Health Science	Career Cert	Electroneurodiagnostic Technology (0351090300)
Health Science	Career Cert	Health Unit Coordinator/ Monitor Technician (0351070302)
Health Science	Career Cert	Hemodialysis Technician (0351101100)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Health Science	Career Cert	Home Health Aide (0351260200)
Health Science	Career Cert	Medical Assisting (0351080102)
Health Science	Career Cert	Medical Coder/Biller (0351070716)
Health Science	Career Cert	Nursing Assistant (Articulated) (0351390203)
Health Science	Career Cert	Nursing Assistant (Long- Term Care) (0351390200)
Health Science	Career Cert	Orthopedic Technology (0351080605)
Health Science	Career Cert	Patient Care Technician (0351390205)
Health Science	Career Cert	Pharmacy Technician (0351080506)
Health Science	Career Cert	Phlebotomy (0351100901)
Health Science	Career Cert	Radiologic Technology (0351090706)
Health Science	Career Cert	Surgical Technology (0351090905)
Health Science	CCC	Biotechnology Laboratory Specialist (0341010101)
Health Science	CCC	Biotechnology Specialist (0626120101)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Health Science	CCC	Diagnostic Medical Sonography Specialist (0351091005)
Health Science	CCC	Eye Care Technician (0351180302)
Health Science	CCC	Healthcare Informatics Specialist (0351070712)
Health Science	CCC	Medical Assisting Specialist (0351080104)
Health Science	CCC	Medical Information Coder/Biller (0351070714)
Health Science	CCC	Nuclear Medicine Technology Specialist (0351090503)
Health Science	CCC	Paramedic (0351090405)
Health Science	CCC	Radiation Therapy Specialist (0351090703)
Health Science	CCC	Surgical Technology Specialist (0351090904)
Hospitality & Tourism	AS/AAS	Restaurant Management (1252090500)
Hospitality & Tourism	CCC	Baking & Pastry Arts (0612050102)
Hospitality & Tourism	CCC	Chefs Apprentice (0612050302)
Hospitality & Tourism	CCC	Culinary Arts (0612050301)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Hospitality & Tourism	CCC	Culinary Arts Management Operations (0612050401)
Hospitality & Tourism	CCC	Event Planning Management (0252090905)
Hospitality & Tourism	CCC	Food and Beverage Management (0252090503)
Hospitality & Tourism	CCC	Food and Beverage Specialist (0252090507)
Hospitality & Tourism	CCC	Guest Services Specialist (0252090403)
Hospitality & Tourism	CCC	Professional Research Diving (0249030401)
Hospitality & Tourism	CCC	Rooms Division Management (0252090402)
Hospitality & Tourism	CCC	Rooms Division Operations (0252090406)
Hospitality & Tourism	CCC	Rooms Division Specialist (0252090405)
Human Services	Bachelor's	Human Services (1104400001)
Human Services	Career Cert	Advanced Esthetics (0612040902)
Human Services	Career Cert	Cosmetology (0612040102)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Human Services	Career Cert	Facials Specialty (0612040805)
Human Services	Career Cert	Nails Specialty (0612041004)
Information Technology	AS/AAS	Computer Information Technology (1511010307)
Information Technology	Bachelor's	Computer Networking (1101109011)
Information Technology	Bachelor's	Information Technology and Security Management (1101101034)
Information Technology	Bachelor's	Technology Management (1101110991)
Information Technology	Career Cert	Game/Simulation/ Animation Visual Design (0550041114)
Information Technology	CCC	Advanced Network Infrastructure (0511100115)
Information Technology	CCC	Computer Programming Specialist (0511020103)
Information Technology	CCC	Database & E-Commerce Security (0511100311)
Information Technology	CCC	Digital Forensics (0511100119)
Information Technology	CCC	Help Desk Support Technician (0511010313)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Information Technology	CCC	Information Technology Support Specialist (0511010311)
Information Technology	CCC	IP Communications (0511100120)
Information Technology	CCC	Linux System Administrator (0511100122)
Information Technology	CCC	Network Enterprise Administration (0511100113)
Information Technology	CCC	Network Infrastructure (0511100114)
Information Technology	CCC	Network Server Administration (0511100112)
Information Technology	CCC	Network Support Technician (0511100121)
Law, Public Safety & Security	APPR	Fire Fighter - APPR (0843020300)
Law, Public Safety & Security	AS/AAS	Fire Science Technology (1743020112)
Law, Public Safety & Security	AS/AAS	Paralegal Studies (Legal Assisting) (1722030200)
Law, Public Safety & Security	AS/AAS	Security Management and Administration (1743011202)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Law, Public Safety & Security	Bachelor's	Criminal Justice (1104301041)
Law, Public Safety & Security	Bachelor's	Paralegal Studies (1102203022)
Law, Public Safety & Security	Bachelor's	Public Safety Administration (1104399991)
Law, Public Safety & Security	Career Cert	Bail Bond Agent (0743019902)
Law, Public Safety & Security	Career Cert	Correctional Officer (Traditional Correctional BRTP) (0743010200)
Law, Public Safety & Security	Career Cert	Crossover from Correctional Officer to Law Enforcement Officer (0743010702)
Law, Public Safety & Security	Career Cert	Crossover from Law Enforcement Officer to Correctional Officer (0743010205)
Law, Public Safety & Security	Career Cert	Fire Fighter I/II (0743020303)
Law, Public Safety & Security	Career Cert	Florida Law Enforcement Academy (0743010700)
Law, Public Safety & Security	Career Cert	Police Service Aide (0743019903)
Law, Public Safety & Security	Career Cert	Private Investigator Intern (0743010907)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Law, Public Safety & Security	Career Cert	Private Security Officer (0743010900)
Law, Public Safety & Security	Career Cert	Public Safety Telecommunication (0743039900)
Law, Public Safety & Security	CCC	Crime Scene Technician (0743010601)
Law, Public Safety & Security	CCC	Fire Officer Supervisor (0743020111)
Law, Public Safety & Security	CCC	Homeland Security Professional (0743011202)
Law, Public Safety & Security	CCC	Homeland Security Specialist (0743010306)
Manufacturing	APPR	Machining - APPR (0848050302)
Manufacturing	APPR	Millwright - APPR (0847030302)
Manufacturing	APPR	Sheet Metal Fabrication Technology - APPR (0848050600)
Manufacturing	AS/AAS	Aerospace Technology (1615080100)
Manufacturing	AS/AAS	Chemical Technology (1641030100)
Manufacturing	AS/AAS	Electronics Engineering Technology (1615030301)
Manufacturing	AS/AAS	Engineering Technology (1615000001)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Manufacturing	AS/AAS	Industrial Management Technology (1652020501)
Manufacturing	Bachelor's	Electronics Engineering Technology (1101503031)
Manufacturing	Bachelor's	Engineering Technology (1101599991)
Manufacturing	Career Cert	Electrical and Instrumentation Technology 1 (0615040401)
Manufacturing	Career Cert	Electrical and Instrumentation Technology 2 (0615040402)
Manufacturing	Career Cert	Electronic Technology 2 (0615030316)
Manufacturing	Career Cert	Industrial Machinery Maintenance & Repair (0647030300)
Manufacturing	Career Cert	Industrial Machinery Maintenance 1 (0647030303)
Manufacturing	Career Cert	Machining Technologies (0648050305)
Manufacturing	Career Cert	Millwright 1 (0647030305)
Manufacturing	Career Cert	Welding Technology - Advanced (0648050806)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Manufacturing	Career Cert	Welding Technology (0648050805)
Manufacturing	CCC	Alternative Energy Systems Specialist (0615050303)
Manufacturing	CCC	Automation (0615040601)
Manufacturing	CCC	Basic Electronics Technician (0615030310)
Manufacturing	CCC	Chemical Laboratory Specialist (0641030101)
Manufacturing	CCC	CNC Machinist/Fabricator (0648051002)
Manufacturing	CCC	Computer-Aided Design and Drafting (0615130304)
Manufacturing	CCC	Electronics Aide (0615030313)
Manufacturing	CCC	Electronics Technician (0615030309)
Manufacturing	CCC	Engineering Technology Support Specialist (0615000007)
Manufacturing	CCC	Industry Operations Specialist (0652020502)
Manufacturing	CCC	Laser and Photonics Technician (0615030411)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Manufacturing	CCC	Lean Six Sigma Green Belt Certificate (0615070203)
Manufacturing	CCC	Mechatronics (0615000013)
Manufacturing	CCC	Microcomputer Repairer/ Installer (0647010406)
Manufacturing	CCC	Pneumatics, Hydraulics & Motors for Manufacturing (0615061303)
Manufacturing	CCC	Rapid Prototyping Specialist (0615000012)
Manufacturing	CCC	Robotics and Simulation Technician (0615040514)
Manufacturing	CCC	Scientific Workplace Preparation (0641030102)
Manufacturing	CCC	Six Sigma Black Belt Certificate (0615070202)
Marketing, Sales & Services	Career Cert	Real Estate Sales Agent (0252150107)
Marketing, Sales & Services	Career Cert	Real Estate Sales Associate Post Licensing (0252150101)
Marketing, Sales & Services	CCC	Entrepreneurship (0252070100)
Marketing, Sales & Services	CCC	Marketing Operations (0252140111)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	APPR	Heavy Equipment Mechanics - APPR (0847030200)
Transportation, Distribution & Logistics	APPR	Heavy Equipment Operation - APPR (0849020200)
Transportation, Distribution & Logistics	AS/AAS	Automotive Service Management Technology (0615080300)
Transportation, Distribution & Logistics	AS/AAS	Aviation Administration (1649010403)
Transportation, Distribution & Logistics	AS/AAS	Aviation Maintenance Management (1649010401)
Transportation, Distribution & Logistics	AS/AAS	Dealer-Specific Automotive Technology (0647060407)
Transportation, Distribution & Logistics	AS/AAS	Marine Engineering, Management & Seamanship (0647060500)
Transportation, Distribution & Logistics	Bachelor's	Supply Chain Management (1105202031)
Transportation, Distribution & Logistics	Bachelor's	Supply Chain Management (1105202032)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	Career Cert	Advanced Automotive Service Technology (0647060406)
Transportation, Distribution & Logistics	Career Cert	Automotive Service Technology 1 (0647060411)
Transportation, Distribution & Logistics	Career Cert	Automotive Service Technology 2 (0647060412)
Transportation, Distribution & Logistics	Career Cert	Commercial Class B Driving (0649020502)
Transportation, Distribution & Logistics	Career Cert	Commercial Vehicle Driving (0649020500)
Transportation, Distribution & Logistics	Career Cert	Diesel Systems Technician 1 (0647061305)
Transportation, Distribution & Logistics	Career Cert	Diesel Systems Technician 2 (0647061306)
Transportation, Distribution & Logistics	Career Cert	Marine Service Technologies (0647061611)
Transportation, Distribution & Logistics	Career Cert	Transit Technician 3 (0647061309)
Transportation, Distribution & Logistics	CCC	Commercial Pilot (0649010202)
Transportation, Distribution & Logistics	CCC	Logistics and Transportation Specialist (0652020901)

Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	CCC	Marine Electrician (0647060506)
Transportation, Distribution & Logistics	CCC	Marine Propulsion Technician (0647060505)

POSTSECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF LOCAL OR INDUSTRY NEED

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	APPR	Service Animal Trainer - APPR (0851080800)**
Architecture & Construction	Career Cert	Electronic Systems Integration and Automation (0647010106)**
Arts, A/V Technology & Communication	AS/AAS	Fashion Design (1450040700)**
Arts, A/V Technology & Communication	AS/AAS	Interior Design Technology (1450040801)
Arts, A/V Technology & Communication	AS/AAS	New Media Communications (1609049901)**
Arts, A/V Technology & Communication	CCC	Communication Leadership (0609049902)**
Arts, A/V Technology & Communication	CCC	Home Staging Specialist (0450040807)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	CCC	Kitchen and Bath Specialization (0450040805)
Business Management and Administration	Career Cert	Court Reporting 2 (0522030305)
Education & Training	AS/AAS	ASL - English Interpreting (1713100305)**
Education & Training	AS/AAS	Translation-Interpretation Studies: English-Spanish Track (1713100304)**
Education & Training	CCC	Translation Studies: English - Spanish (0713100305)
Health Science	CCC	Ophthalmic Laboratory Technician (0351100600)
Hospitality & Tourism	AS/AAS	Dietetic Technician (1351310301)
Hospitality & Tourism	Career Cert	Dietetic Management and Supervision (0351310405)**
Hospitality & Tourism	Career Cert	Nutrition and Dietetic Clerk (0351310302)**
Manufacturing	Career Cert	Electronic Technology 1 (0615030315)
Manufacturing	Career Cert	Gaming Machine Repair Technician (0647000001)
Transportation, Distribution & Logistics	CCC	Automotive Service Technician (0615080301)

Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	CCC	General Automotive Technician (0615080302)

** Indicates new programs (first implemented in either 2016-17, 2017-18, or 2018-19).

POSTSECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF INSTITUTIONAL PERFORMANCE

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	APPR	Nursery Management - APPR (0801060602)*
Agriculture, Food & Natural Resources	APPR	Nursery Technician - APPR (0801060603)*
Agriculture, Food & Natural Resources	AS/AAS	Agribusiness Management (1101010100)*
Agriculture, Food & Natural Resources	AS/AAS	Agricultural Production Technology (1101000000)*
Agriculture, Food & Natural Resources	AS/AAS	Aquaculture Management (1101030301)*
Agriculture, Food & Natural Resources	AS/AAS	Biomass Cultivation (1101110302)*
Agriculture, Food & Natural Resources	AS/AAS	Environmental Science Technology (1703010401)
Agriculture, Food & Natural Resources	AS/AAS	Equine Studies (1101050701)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	AS/AAS	Marine Environmental Technology (1103060100)
Agriculture, Food & Natural Resources	Career Cert	Advanced Water Treatment Technologies (0715050606)*
Agriculture, Food & Natural Resources	Career Cert	Landscape & Turf Management (0101060703)*
Agriculture, Food & Natural Resources	Career Cert	Nursery Management (0101060602)*
Agriculture, Food & Natural Resources	Career Cert	Wastewater Treatment Technologies (0715050604)*
Agriculture, Food & Natural Resources	Career Cert	Water Treatment Technologies (0715050603)*
Agriculture, Food & Natural Resources	CCC	Aquaculture Technology (0101030302)
Agriculture, Food & Natural Resources	CCC	Biomass Cultivation Specialist (0101110301)*
Agriculture, Food & Natural Resources	CCC	Environmental Science Technician (0703010407)
Agriculture, Food & Natural Resources	CCC	Equine Assistant Management (0101050701)*
Agriculture, Food & Natural Resources	CCC	Equine Technician (0101050703)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	CCC	Horticulture Specialist (0101010102)*
Architecture & Construction	APPR	Brick and Block Masonry - APPR (0846010103)
Architecture & Construction	APPR	Brick and Tile Masonry - APPR (0846010104)*
Architecture & Construction	APPR	Drafting - APPR (0815130103)*
Architecture & Construction	APPR	Geodetic Computator - APPR (0815110202)*
Architecture & Construction	APPR	Glazing - APPR (0846040600)*
Architecture & Construction	APPR	Line Erector - APPR (0846030301)*
Architecture & Construction	APPR	Painting and Decorating - APPR (0846040800)
Architecture & Construction	APPR	Plastering - APPR (0846040401)*
Architecture & Construction	APPR	Refrigeration Technology - APPR (0847020102)*
Architecture & Construction	APPR	Roadway Technician - APPR (0846049901)*
Architecture & Construction	APPR	Roofing - APPR (0846041000)*
Architecture & Construction	APPR	Surveying and Mapping Technology - APPR (0815110200)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	APPR	Tile Setting - APPR (0846010105)*
Architecture & Construction	AS/AAS	Architectural Design & Construction Technology (1604090100)
Architecture & Construction	AS/AAS	Building Construction Technology (1615100102)
Architecture & Construction	AS/AAS	Construction Management Technology (1646041201)
Architecture & Construction	Career Cert	Brick and Block Masonry (0646010103)*
Architecture & Construction	Career Cert	Building Construction Technologies (0646041502)
Architecture & Construction	Career Cert	Building Trades and Construction Design Technology (0646041506)
Architecture & Construction	Career Cert	Cabinetmaking (0648070303)*
Architecture & Construction	Career Cert	Drafting (0615130100)
Architecture & Construction	Career Cert	Industrial Pipefitter (0646050303)*
Architecture & Construction	Career Cert	Painting and Decorating (0646040800)*
Architecture & Construction	Career Cert	Tile Setting (0646010106)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Architecture & Construction	CCC	Green Building Construction Technology (0615100104)*
Architecture & Construction	CCC	Residential Air Conditioning, Refrigeration & Heating Systems Assistant (0615050101)*
Architecture & Construction	CCC	Residential Air Conditioning, Refrigeration & Heating Systems Technician (0615050102)*
Arts, A/V Technology & Communication	APPR	Telecommunications Technology - APPR (0847010301)*
Arts, A/V Technology & Communication	AS/AAS	Digital Television and Media Production (1609070213)
Arts, A/V Technology & Communication	AS/AAS	Film Production Technology (1650060213)
Arts, A/V Technology & Communication	AS/AAS	Graphic Arts Technology (1611080301)*
Arts, A/V Technology & Communication	AS/AAS	Graphics Technology (1611080300)
Arts, A/V Technology & Communication	AS/AAS	Interactive Media Production Technology (1610020101)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	AS/AAS	Music Production Technology (1650091300)
Arts, A/V Technology & Communication	AS/AAS	Telecommunications Engineering Technology (1615030302)*
Arts, A/V Technology & Communication	AS/AAS	Theater and Entertainment Technology (1650050202)
Arts, A/V Technology & Communication	Bachelor's	Film, Television, and Digital Production (1105006021)
Arts, A/V Technology & Communication	Career Cert	3 D Animation Technology (0610030400)
Arts, A/V Technology & Communication	Career Cert	Commercial Art Technology (0650040208)
Arts, A/V Technology & Communication	Career Cert	Commercial Art Technology 2 (0650040215)*
Arts, A/V Technology & Communication	Career Cert	Digital Cinema Production (0650060211)*
Arts, A/V Technology & Communication	Career Cert	Digital Design (0510030306)
Arts, A/V Technology & Communication	Career Cert	Digital Design 2 (0510030308)
Arts, A/V Technology & Communication	Career Cert	Digital Media/Multimedia Design (0609070208)
Arts, A/V Technology & Communication	Career Cert	Stage Production (0647010305)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	Career Cert	Telecommunications Technology (0647010301)*
Arts, A/V Technology & Communication	Career Cert	Wireless Telecommunications (0615030502)
Arts, A/V Technology & Communication	CCC	Audio Electronics Specialist (0650091301)*
Arts, A/V Technology & Communication	CCC	Broadcast Production (0610020216)
Arts, A/V Technology & Communication	CCC	Digital Media/Multimedia Authoring (0609070209)
Arts, A/V Technology & Communication	CCC	Digital Media/Multimedia Production (0610010507)
Arts, A/V Technology & Communication	CCC	Digital Media/Multimedia Video Production (0609070210)
Arts, A/V Technology & Communication	CCC	Digital Media/Multimedia Web Production (0650010208)
Arts, A/V Technology & Communication	CCC	Digital Music Production (0650091302)*
Arts, A/V Technology & Communication	CCC	Digital Video Fundamentals (0610030414)
Arts, A/V Technology & Communication	CCC	Film Production Fundamentals (0650060203)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	CCC	Graphic Design Production (0611080303)
Arts, A/V Technology & Communication	CCC	Interactive Media Production (0611080304)
Arts, A/V Technology & Communication	CCC	Motion Picture Post Production (0650060205)
Arts, A/V Technology & Communication	CCC	Motion Picture Production (0650060204)*
Arts, A/V Technology & Communication	CCC	Motion Picture Production Management (0650060206)*
Arts, A/V Technology & Communication	CCC	Network Communications (LAN) (0611100206)*
Arts, A/V Technology & Communication	CCC	Stage Technology (0650050201)
Arts, A/V Technology & Communication	CCC	Television System Support (0609040205)*
Arts, A/V Technology & Communication	CCC	Webcast Media (0650010215)*
Arts, A/V Technology & Communication	CCC	Webcast Technology (0650010218)*
Business Management & Administration	AS/AAS	Applied Management (0552020107)*
Business Management & Administration	AS/AAS	Business Administration (1552020102)
Business Management & Administration	AS/AAS	Business Analysis Specialist (1552120106)*

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

Career Cluster	Program Type	Title
Business Management & Administration	AS/AAS	Business Entrepreneurship (1552070308)
Business Management & Administration	AS/AAS	Medical Office Administration (1552020404)
Business Management & Administration	Bachelor's	International Business and Trade (1105211011)
Business Management & Administration	Bachelor's	Project Management (1105202021)
Business Management & Administration	Career Cert	Administrative Office Specialist (0552040103)
Business Management & Administration	Career Cert	Customer Assistance Technology (0552041102)*
Business Management & Administration	Career Cert	International Business (0552110110)*
Business Management & Administration	Career Cert	Legal Administrative Specialist (0522030103)
Business Management & Administration	CCC	Business Development and Entrepreneurship (0552070306)
Business Management & Administration	CCC	Business Management (0552070101)
Business Management & Administration	CCC	Entrepreneurship Operations (0552070309)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

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Career Cluster	Program Type	Title
Business Management & Administration	CCC	Human Resources Administrator (0552020105)
Education & Training	AS/AAS	Early Childhood Management (1419070802)
Education & Training	AS/AAS	Sports, Fitness, and Recreation Management (1731050701)*
Education & Training	Bachelor's	Educational Studies - non-certification (1101399991)
Education & Training	Bachelor's	Secondary Chemistry Education (1101313231)*
Education & Training	Bachelor's	Secondary Earth/Space Science Education (1101313163)*
Education & Training	Bachelor's	Secondary Physics Education (1101313291)*
Education & Training	Career Cert	Early Childhood Education (0419070913)
Education & Training	Career Cert	Family Child Care Training (0419070905)
Education & Training	CCC	Child Care Center Management Specialization (0419070906)

FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:
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Career Cluster	Program Type	Title
Education & Training	CCC	High/Scope Preschool Approach Curriculum Specialization (0413030111)*
Education & Training	CCC	Montessori Preschool Curriculum Specialization (0413030112)*
Education & Training	CCC	School Age Specialization (0419070909)*
Energy	APPR	Electric Meter Repairer - APPR (0846030302)*
Energy	AS/AAS	Electrical Distribution Technology (0646030104)*
Energy	Bachelor's	Energy Technology Management (1101505031)*
Energy	Career Cert	Energy Technician (0715050320)*
Energy	Career Cert	Solar Energy Technology (0715050500)*
Energy	Career Cert	Solar Thermal System Design, Installation and Maintenance - Entry Level (0715050303)*
Energy	CCC	Alternative Energy Engineering Technology (0615050304)*

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Career Cluster	Program Type	Title
Finance	AS/AAS	Banking-Financial Services (1252080300)*
Finance	AS/AAS	Financial Services (1252080100)*
Finance	CCC	Banking Management-Financial Services (0252080301)*
Finance	CCC	Financial Para-planner-Financial Services (0252080102)*
Finance	CCC	Mortgage Finance Management-Financial Services (0252080103)*
Finance	CCC	Mortgage Finance Specialist-Financial Services (0252080105)*
Government & Public Administration	AS/AAS	Emergency Administration and Management (1743030200)
Government & Public Administration	CCC	Emergency Administrator and Manager (0743030201)
Health Science	AS/AAS	Biotechnology Laboratory Technology (1341010100)

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Career Cluster	Program Type	Title
Health Science	AS/AAS	Dental Laboratory Technology and Management (0351060301)
Health Science	AS/AAS	Health Services Management (1351070101)
Health Science	AS/AAS	Medical Assisting Advanced (1351080103)*
Health Science	AS/AAS	Optical Management (1351180202)*
Health Science	AS/AAS	Surgical First Assisting (1351090900)
Health Science	ATD	Medical Clinical Laboratory Technician -ATD (0351100401)*
Health Science	ATD	Medical Coder/Biller--ATD (0351070713)*
Health Science	ATD	Medical Record Transcribing/Healthcare Documentation - ATD (0351070704)*
Health Science	ATD	Medical Record Transcribing--ATD (0351070706)
Health Science	Bachelor's	Health Sciences (1105100005)*

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Career Cluster	Program Type	Title
Health Science	Bachelor's	Veterinary Technology (1105108081)
Health Science	Career Cert	Electrocardiograph Technology (0351090203)
Health Science	Career Cert	Medical Education Simulator Technician (0311010200)*
Health Science	Career Cert	Medical Laboratory Assisting (0351080201)
Health Science	Career Cert	Medical Record Transcribing/Healthcare Documentation (0351070701)
Health Science	Career Cert	Patient Care Assistant (0351390202)
Health Science	CCC	Central Sterile Processing Technologist (0351090903)*
Health Science	CCC	Endoscopic Technician (0351099902)*
Health Science	CCC	Florida Funeral Director (0312030102)*
Health Science	CCC	Health Care Services (0351070201)
Health Science	CCC	Surgical First Assistant (0351090908)
Hospitality & Tourism	APPR	Commercial Foods - APPR (0812050301)*

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Career Cluster	Program Type	Title
Hospitality & Tourism	APPR	Commercial Foods and Culinary Arts - APPR (0812050300)*
Hospitality & Tourism	APPR	Culinary Operations - APPR (0812050503)*
Hospitality & Tourism	AS/AAS	Baking & Pastry Management (1612050102)*
Hospitality & Tourism	AS/AAS	Diving Business and Technology (0249030400)
Hospitality & Tourism	Career Cert	Baking and Pastry Arts (0612050103)
Hospitality & Tourism	Career Cert	Environmental Services (0419069911)
Hospitality & Tourism	Career Cert	Professional Culinary Arts & Hospitality (0412050312)
Hospitality & Tourism	CCC	Diving Medical Technician (0249030402)*
Hospitality & Tourism	CCC	Food and Beverage Operations (0252090508)*
Hospitality & Tourism	CCC	Fundamentals of Professional Diving (0249030404)*
Hospitality & Tourism	CCC	Introduction to Commercial Work/Diving (0249030405)*

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Career Cluster	Program Type	Title
Hospitality & Tourism	CCC	Professional Dive Instructor (0249030403)*
Information Technology	APPR	Computer Systems Technology - APPR (0815120200)*
Information Technology	APPR	Geospatial/Geographic Information System (GIS) Technology - APPR (0815110201)*
Information Technology	APPR	Information Technology - APPR (0811010300)*
Information Technology	APPR	PC Support Services -APPR (0811010100)*
Information Technology	AS/AAS	Business Intelligence Specialist (1552130101)*
Information Technology	AS/AAS	Computer Programming and Analysis (1511020101)
Information Technology	AS/AAS	E-Business Technology (1552120107)*
Information Technology	Bachelor's	Computer Information Systems Technology (1101104011)
Information Technology	Bachelor's	Cybersecurity (1101110031)*
Information Technology	Bachelor's	Information Technology (1101101032)

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Career Cluster	Program Type	Title
Information Technology	Career Cert	.NET Application Development and Programming (0511020314)*
Information Technology	Career Cert	Applied Cybersecurity (0511100302)
Information Technology	Career Cert	Applied Information Technology (0511010302)
Information Technology	Career Cert	Business Computer Programming (0511020202)*
Information Technology	Career Cert	Cloud Computing & Virtualization (0511100303)*
Information Technology	Career Cert	Computer Systems & Information Technology (CSIT) (0511090107)
Information Technology	Career Cert	Database and Programming Essentials (0511080207)*
Information Technology	Career Cert	Database Application Development & Programming (0511020315)
Information Technology	Career Cert	Digital Media Technology (0509070200)*

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Career Cluster	Program Type	Title
Information Technology	Career Cert	Game/Simulation/ Animation Advanced Applications (0550041117)*
Information Technology	Career Cert	Game/Simulation/ Animation Audio/Video Effects (0550041115)*
Information Technology	Career Cert	Game/Simulation/ Animation Programming (0550041116)
Information Technology	Career Cert	Geospatial/Geographic Information System (GIS) Technology (0545070214)*
Information Technology	Career Cert	Java Development & Programming (0511020313)
Information Technology	Career Cert	Network Support Services (0511090102)
Information Technology	Career Cert	Network Systems Administration (0511090105)
Information Technology	Career Cert	Technology Support Services (0515120200)
Information Technology	Career Cert	Web Application Development & Programming (0511020102)

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Career Cluster	Program Type	Title
Information Technology	Career Cert	Web Development (0511080100)
Information Technology	CCC	Advanced Network Virtualization (0511100117)*
Information Technology	CCC	Computer Programmer (0511020200)
Information Technology	CCC	E-Business Security Technical Certificate (0552120102)*
Information Technology	CCC	E-Business Software Technical Certificate (0552120103)*
Information Technology	CCC	E-Business Technical Certificate (0552120101)*
Information Technology	CCC	E-Business Technology Technical Certificate (0552120104)*
Information Technology	CCC	E-Business Ventures Technical Certificate (0552120105)*
Information Technology	CCC	Geographic Information System (0545070213)*
Information Technology	CCC	Information Technology Administration (0511010307)
Information Technology	CCC	Information Technology Analysis (0511010312)

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Career Cluster	Program Type	Title
Information Technology	CCC	Microsoft Certified Database Administrator Certificate (0511020309)*
Information Technology	CCC	Mobile Device Technology (0511010309)*
Information Technology	CCC	Network Security (0511100118)
Information Technology	CCC	Network Virtualization (0511100116)
Information Technology	CCC	Oracle Certified Database Administrator (0511020307)
Information Technology	CCC	Oracle Certified Database Developer (0511020308)*
Information Technology	CCC	Web Development Specialist (0511080103)
Law, Public Safety & Security	APPR	Fire Fighter/Emergency Medical Technician-Combined - APPR (0843020301)*
Law, Public Safety & Security	AS/AAS	Crime Scene Technology (1743010600)
Law, Public Safety & Security	AS/AAS	Criminal Justice Technology (1743010302)

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Career Cluster	Program Type	Title
Law, Public Safety & Security	Career Cert	Crossover from Correctional Officer to Correctional Probation Officer (0743010203)*
Law, Public Safety & Security	Career Cert	Crossover from Correctional Probation Officer to CMS Correctional B RTP (0743010204)*
Law, Public Safety & Security	Career Cert	Crossover from Correctional Probation Officer to Law Enforcement Officer (0743010703)*
Law, Public Safety & Security	CCC	Criminal Justice Technology Specialist (0743010304)
Law, Public Safety & Security	CCC	Gang-Related Investigations (0743010705)*
Manufacturing	APPR	Applied Welding Technologies - APPR (0848050802)*
Manufacturing	APPR	Commercial Sign Design and Fabrication - APPR (0810039900)*

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Career Cluster	Program Type	Title
Manufacturing	APPR	Electrical and Instrumentation Technology - APPR (0814410100)*
Manufacturing	APPR	Electronic Technology - APPR (0815030300)*
Manufacturing	APPR	Industrial Machinery Maintenance - APPR (0847030300)*
Manufacturing	APPR	Major Appliance and Refrigeration Repair - APPR (0847010601)*
Manufacturing	AS/AAS	Computer Engineering Technology (1615120100)
Manufacturing	AS/AAS	Manufacturing Technology (1615061307)*
Manufacturing	AS/AAS	Simulation Technology (1615080101)*
Manufacturing	Bachelor's	Aerospace Sciences (1104901011)*
Manufacturing	Bachelor's	Industrial Biotechnology (1102612011)*
Manufacturing	Career Cert	Biomedical Equipment Repair Technology (0615040106)*

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Career Cluster	Program Type	Title
Manufacturing	Career Cert	Electrical and Instrumentation Technology (0615040400)*
Manufacturing	Career Cert	Industrial Machinery Maintenance 2 (0647030304)*
Manufacturing	Career Cert	Industrial Technology (0615061200)*
Manufacturing	Career Cert	Jewelry Making and Repair (0647040806)*
Manufacturing	Career Cert	Jewelry Making and Repair 1 (0647040804)
Manufacturing	Career Cert	Jewelry Making and Repair 2 (0647040805)
Manufacturing	Career Cert	Mechatronics Technology (0615049901)*
Manufacturing	Career Cert	Millwright (0647030302)*
Manufacturing	Career Cert	Millwright 2 (0647030306)*
Manufacturing	CCC	Applied Technology Specialist (0615061203)*
Manufacturing	CCC	CNC Composite Fabricator/Programmer (0615080501)*
Manufacturing	CCC	CNC Machinist Operator/Programmer (0615000015)*

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Career Cluster	Program Type	Title
Manufacturing	CCC	Composite Fabrication and Testing (0647061608)*
Manufacturing	CCC	Digital Manufacturing Specialist (0615000009)*
Manufacturing	CCC	Lean Manufacturing (0615061302)*
Manufacturing	CCC	Mechanical Designer and Programmer (0615080503)*
Manufacturing	CCC	Medical Quality Systems (0641010105)*
Manufacturing	CCC	Solar Energy Technician (0615050517)*
Marketing, Sales & Services	AS/AAS	Marketing Management (1252140101)
Marketing, Sales & Services	Career Cert	Distribution and Logistics Management (0252040900)
Marketing, Sales & Services	Career Cert	Marketing, Management and Entrepreneurial Principles (0252140104)
Transportation, Distribution & Logistics	APPR	Automotive Collision Repair and Refinishing - APPR (0847060300)*
Transportation, Distribution & Logistics	APPR	Automotive Service Technology - APPR (0847060405)*

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Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	AS/AAS	Aviation Operations (1649010404)
Transportation, Distribution & Logistics	AS/AAS	Professional Pilot Technology (1649010200)
Transportation, Distribution & Logistics	AS/AAS	Supply Chain Management (1652020901)*
Transportation, Distribution & Logistics	AS/AAS	Transportation and Logistics (1652020301)*
Transportation, Distribution & Logistics	AS/AAS	Unmanned Vehicle Systems Operations (1615080102)*
Transportation, Distribution & Logistics	Career Cert	Advanced Automotive Service Technology 1 (0647060413)*
Transportation, Distribution & Logistics	Career Cert	Advanced Automotive Service Technology 2 (0647060414)*
Transportation, Distribution & Logistics	Career Cert	Aircraft Coating and Corrosion Control Technology (0647060701)*
Transportation, Distribution & Logistics	Career Cert	Global Logistics and Supply Chain Technology (0652020300)*
Transportation, Distribution & Logistics	Career Cert	Transit Technician 1 (0647061307)*

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Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	Career Cert	Transit Technician 2 (0647061308)*
Transportation, Distribution & Logistics	CCC	Air Cargo Management (0649010404)*
Transportation, Distribution & Logistics	CCC	Dealer Line Technician (0647060418)*
Transportation, Distribution & Logistics	CCC	Dealer Service Technician (0647060419)*
Transportation, Distribution & Logistics	CCC	Intermodal Freight Transportation (0652020303)*
Transportation, Distribution & Logistics	CCC	International Freight Transportation (0652020302)*
Transportation, Distribution & Logistics	CCC	Marine Systems Technician (0647060513)*
Transportation, Distribution & Logistics	CCC	Marine Technology (0647060512)
Transportation, Distribution & Logistics	CCC	Passenger Service Agent (0649010406)*

* Indicates programs with insufficient data on institutional PQIs.

POSTSECONDARY PROGRAMS – PROGRESSING FOR FURTHER REVIEW OF LOCAL OR INDUSTRY NEED AND INSTITUTIONAL PERFORMANCE

Career Cluster	Program Type	Title
Agriculture, Food & Natural Resources	AS/AAS	Citrus Production Technology (1101110303)*
Agriculture, Food & Natural Resources	AS/AAS	Turf Equipment Management (1131030201)*
Agriculture, Food & Natural Resources	ATD	Turf Equipment Technology--ATD (0131030202)*
Agriculture, Food & Natural Resources	ATD	Turf Equipment Technology--ATD (0131030203)*
Agriculture, Food & Natural Resources	Bachelor's	Biology (1102601011)*
Agriculture, Food & Natural Resources	Bachelor's	Environmental Science (1100301991)*
Agriculture, Food & Natural Resources	Bachelor's	Water Resources Management (1100302052)*
Agriculture, Food & Natural Resources	CCC	Marine Mammal Behavior and Training (0103060101)*
Agriculture, Food & Natural Resources	CCC	Tropical Ornamental Mariculture Technician (0103060102)*

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Career Cluster	Program Type	Title
Architecture & Construction	APPR	Commercial and Industrial Insulation - APPR (0846041400)*
Architecture & Construction	APPR	Swimming Pool Maintenance - APPR (0846999903)*
Arts, A/V Technology & Communication	AS/AAS	Photographic Technology (1650060500)
Arts, A/V Technology & Communication	Career Cert	Commercial Art Technology 1 (0650040214)*
Arts, A/V Technology & Communication	Career Cert	Commercial Photography Technology (0650040600)*
Arts, A/V Technology & Communication	Career Cert	Commercial Photography Technology 1 (0650040605)
Arts, A/V Technology & Communication	Career Cert	Commercial Photography Technology 2 (0650040606)
Arts, A/V Technology & Communication	Career Cert	Digital Audio Production (0650060223)
Arts, A/V Technology & Communication	Career Cert	Digital Design 1 (0510030307)
Arts, A/V Technology & Communication	Career Cert	Digital Photography Technology (0650060502)

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Career Cluster	Program Type	Title
Arts, A/V Technology & Communication	Career Cert	Fashion Technology and Design Services (0419090606)*
Arts, A/V Technology & Communication	Career Cert	Fashion Technology and Production Services (0650040701)
Arts, A/V Technology & Communication	Career Cert	Interior Decorating Services (0450040804)
Arts, A/V Technology & Communication	CCC	Digital Media/ Multimedia Presentation (0609070219)*
Arts, A/V Technology & Communication	CCC	Photography (0650060501)
Business Management & Administration	Career Cert	Court Reporting 3 (0522030306)*
Business Management & Administration	Career Cert	Court Reporting Transcriptionist/Court Reporting Technology (0522030311)
Education & Training	CCC	Interpretation Studies: English-Spanish (0713100304)
Health Science	Career Cert	Emergency Medical Responder (0351081000)*
Manufacturing	APPR	Industrial Plastics - APPR (0815060700)*

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Career Cluster	Program Type	Title
Transportation, Distribution & Logistics	Career Cert	Power Equipment Technologies (0647060604)*
Transportation, Distribution & Logistics	CCC	Airline/Aviation Management (0649010403)*
Transportation, Distribution & Logistics	CCC	Airport Management (0649010405)*

* Indicates programs with insufficient data on institutional PQIs.

SECTION 5: STATEWIDE PROGRAM REVIEW RESULTS (PHASE 2)

In Phase 2 of the CTE audit, programs that failed to meet institutional performance benchmarks in Phase 1 and/or if the program had insufficient data at the state level to measure for the institutional performance benchmark were sent for local review. Additionally, programs were sent for local review of market demand if the program did not meet one of the five established criteria for market demand in Phase 1 of the CTE audit (even including new programs that were not subject to the full Phase 1 review). The following section provides additional details on the local program review process.

LOCAL REVIEW PROCESS

LOCAL INSTITUTIONAL PERFORMANCE SUBMISSIONS

For programs flagged for a local review, the department originally intended for districts and colleges to submit a template that included a standardized local institutional performance data review that included the same program review criteria for every district or college. This standardized local review was designed for the purposes of the CTE audit and was to be implemented in every local context, theoretically ensuring that the local review measurement was identical across institutions. As part of this local review process, districts and colleges would have provided written explanations to contextualize their quantitative program performance findings.

However, due to the COVID pandemic, an alternative approach was developed to reduce the reporting burden for the districts and colleges in the first year of the CTE audit. Districts and colleges were not asked to complete a standardized review of local program institutional performance unique to the CTE audit. Instead, districts and colleges were asked to submit to the department their most recent review of program performance, resulting in a wide range of the types of local reviews that were submitted to the department to meet the requirements of the CTE audit.

LOCAL MARKET DEMAND SUBMISSIONS

Secondary programs (career preparatory and technology education) and postsecondary programs were sent for a local review of market demand if the program did not meet the established criteria for statewide market demand in Phase 1, including new programs. Originally, for programs that did not meet market demand in Phase 1, districts and colleges were required to submit a standardized template for supplemental market demand data for programs that required a local review of market demand.

The department assessed the Labor Market Alignment (LMA) submissions made on the Comprehensive Local Needs Assessment (CLNA) of the Perkins V applications. Colleges were asked to complete a supplemental template form for programs that would not appear on the LMA's (e.g., baccalaureate programs).

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For the local reviews, market demand for the CTE audit was demonstrated if the program of study was aligned with an occupation that met one of the following primary source criteria:

- the 2019-20 or 2018-19 Statewide Demand Occupation List (DOL);
- the 2019-20 or 2018-19 Regional DOL;
- the 2019-20 or 2018-19 Regional Targeted Occupation List (TOL);
- an Enterprise Florida Targeted Industry Sector;
- a targeted occupation or sector identified by the local workforce board in a current local WIOA plan; or
- Agriculture-related programs.

Alternatively, market demand for the CTE audit could be demonstrated using any two of the following Secondary Source criteria:

- Job Analytics Resources for the region;
- Local CareerSource Board letter of support;
- Economic development agency letter of support;
- Local Chamber of Commerce letter of support and
- Other Employer or Industry Association letter of support.

For the local review of market demand in Phase 2, districts and colleges had the option to identify additional, alternative occupations associated with their programs (not identified in Phase 1) to demonstrate local market demand.

Some programs required a local review of both institutional performance and market demand, however. In the Phase 2 portion of this report, findings are disaggregated into sections for programs that 1) required a local review of institutional program performance and 2) into sections for programs that required a local review of market demand. Programs that required both a review of institutional performance and market demand are accounted for in the section on local institutional program performance and in the section on local market demand.

SECONDARY PROGRAM LOCAL REVIEWS

LOCAL TERMINATIONS OF SECONDARY PROGRAM OFFERINGS

The CTE audit is intended to stimulate the evaluation of programs such that districts consider the overall health of their local program offerings. Accordingly, the local review process required districts indicate whether the district planned to terminate the offering of programs that did not meet performance benchmarks or market demand in Phase 1 of the review.

Table 4 reports that there were 76 secondary programs in the CTE audit that were sent for a local review associated with 934 local offerings. Districts reported termination or a plan to terminate 243 local offerings (approximately 21 percent) of secondary programs that did not meet the benchmarks in phase 1 of the CTE audit.

TABLE 4: SECONDARY CTE PROGRAMS SENT FOR LOCAL REVIEW AND TERMINATIONS REPORTED BY DISTRICTS

Action Required for Program	Programs of Study Sent for Local Review*	Local Offerings of Programs of Study	Local Offerings Reported as Terminated or Planning to Terminate
Local institutional performance review	63	816	213

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Action Required for Program	Programs of Study Sent for Local Review*	Local Offerings of Programs of Study	Local Offerings Reported as Terminated or Planning to Terminate
Local market demand review	7	83	18
Local institutional performance and market demand review	6	35	12
Total	76	934	243

* Includes active programs that had insufficient data for the Phase 1 analysis and new programs that did not meet market demand in Phase 1.

Sixty districts reported at least a single termination of a local secondary program offering, with some districts reporting as many as 11 terminations. The department believes that the reporting of at least one termination across the majority of districts demonstrated that districts are carefully reviewing whether secondary programs are meeting the performance standards and market demand in their local context. The most common reasons reported for local termination were the results of the program review process of the audit and low student enrollment. It should be noted that some recent program terminations may have preceded the CTE audit review process.

Of the 243 terminations of local offerings, 88 percent were career preparatory programs and 12 percent were technology education programs. The percent of terminations by program type is representative of all career preparatory and technology education offerings that were sent for local review (of the secondary

program offerings that required some local review, 86 percent were career preparatory and 14 percent were technology education).

The 243 local program terminations occurred across 60 programs of study. Among the 60 programs of study, half of all local terminations (122 terminations) were reported among the 14 programs of study with the highest number of local terminations. Examples of the programs with the most local terminations include Business Computer Programming (12 terminations), Digital Media/Multimedia Design (12 terminations), Digital Design (11 terminations), Administration Office Specialist (10 terminations), and Java Development & Programming (10 terminations). Five programs were reported as being terminated by all districts that offered the program; however, this was a result of the program being offered in only one or very few districts.

In sum, school districts demonstrated careful consideration of the 76 secondary programs that were sent for a review of institutional performance or market demand. Stimulated by the CTE audit to take stock of their local programs' performance and alignment to local market demand, the districts reported 243 local terminations of secondary programs through the CTE audit. The majority of the secondary programs that were flagged for a local review had at least one district report a local termination of their offering of the program. Further, there were some programs of study flagged for local review that were reported as being terminated by a large number of districts at the local level. The elimination of program offerings that were either low performing or not in local demand enhances the districts' ability to offer high-quality programs that better align with local needs.

MARKET DEMAND (CAREER PREPARATORY AND TECHNOLOGY EDUCATION)

At the secondary level, 13 programs of study were sent for a total of 118

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local reviews of market demand.³ After accounting for the local terminations reported to the department, there were a total of 88 local program offerings (11 unique programs) that districts report they are continuing to offer. The department assessed the local market demand reported for these 88 local programs offerings using the LMAs submitted on the CLNAs for the Perkins V applications in fall 2020. For program offerings that did not appear on the LMA, districts were required to submit a similar local market demand review form for the CTE audit.

Among these 88 offerings of secondary programs that required a review of local market demand, the majority (69 offerings) used their LMA to evaluate market demand. One offering, however, was not reported on an LMA and was instead submitted through a supplemental submission form. The CTE audit team did not receive a market demand submission for eighteen local program offerings; a review of local market demand was not submitted through either an LMA or supplemental CTE audit form. These districts will be notified of these missing submissions for the CTE audit and asked to submit a supplemental justification of local market demand if they plan to continue to offer the program. The department will review these submissions to ensure that these local program offerings are meeting market demand. Programs that do not meet current or future market demand at the statewide or local level should be considered for program revision (adjusting learning outcomes to meet market demand), consolidation with like-programs, or program termination.

Among the 70 local offerings that submitted the required local review of market demand, there were nine local program offerings that were reported as “not being aligned with local market demand” as indicated per the LMA submissions. These 9 programs will be further reviewed by the department and will be considered for recommendation for local termination. Therefore, 61 local

³ Among these secondary programs flagged for local review of market demand, there were six programs of study associated with 35 local offerings (30 percent of offerings) that also required a local review of institutional performance. These programs are also counted in every section pertaining to secondary local program institutional performance.

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offerings were reviewed and it was demonstrated that the program met local market demand. Among these 61 local offerings, 42 (69 percent) demonstrated local market demand using a primary source:⁴

- Ten of these local offerings demonstrated market demand using the Primary Sources of the 2019-20 and 2018-19 Statewide DOL. Interestingly, all these local offerings were evaluated using an occupation that was different than the occupation associated with the program in Phase 1 statewide analysis.
- Thirteen of these local offerings demonstrated market demand using the 2019-20 and the 2018-19 Regional DOL. Once again, nearly all (12) of these programs were able to demonstrate local market demand using these Primary Sources because the district identified an alternative occupation that the program of study trained for that was not assessed in Phase 1 of the CTE audit. The only program that did not utilize an alternative occupational alignment found market demand on the 2019-20 Regional DOL; whereas, in Phase 1 of the CTE audit only the 2018-19 Regional DOL was available.

Among the other programs that used a primary source to demonstrate local market demand, three local offerings identified market demand using the 2019-20 and 2018-19 Regional TOL, only three local offerings used the Enterprise Florida Targeted Industry Sector list, three local offerings used a Targeted Occupation or Sector identified by local workforce development board in a current local WIOA plan and 14 local offerings cited that the program as an Agriculture-related program.

Nineteen program offerings (31 percent) demonstrated local market demand using a secondary source.⁵ The most commonly utilized secondary sources

⁴ The total number of primary sources used to demonstrate market demand does not equal 42 because some local offerings demonstrated more than one primary source of local market demand.

⁵ The total number of secondary sources used to demonstrate market demand reflects that each local offering justified market demand with two or more secondary sources.

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included a local workforce development board letter of support (14 program offerings) and an employer or industry association letter of support (13 program offerings). Other secondary sources used were a local chamber of commerce letter of support (seven program offerings), an economic development agency letter of support (seven program offerings), and job analytics resources for the region (four program offerings).

Through the local review of market demand, districts were able to demonstrate their programs' alignment to the labor market using additional measures that were not incorporated in Phase 1 of the CTE audit. The majority of programs were justified through a Statewide or Regional DOL, measures that were included in Phase 1 of the CTE audit, using an alternative occupational alignment to the program of study. The remaining programs demonstrated local market demand using secondary sources, predominately being a letter of support for the program from either a local CareerSource board or an employer or industry association.

INSTITUTIONAL PERFORMANCE (CAREER PREPARATORY AND TECHNOLOGY EDUCATION)

At the secondary level, there were 69 programs of study that were flagged for a total of 851 local reviews of institutional performance. After accounting for the aforementioned local terminations reported back to the department by the districts, there were 626 reviews submitted of local institutional program performance across 64 unique programs of study. The CTE audit review team evaluated submissions for local program quality among these 626 local program offerings. These included secondary programs that were reviewed for institutional performance in Phase 1 and did not meet benchmarks at the state level review (388 local offerings across 28 programs) and secondary programs that were not reviewed for institutional performance in Phase 1 due to insufficient data (146 local offerings across 25 programs).

Each of the submitted local reviews was evaluated by more than one member of the CTE audit review team. The majority of the local program reviews demonstrated either adequate or high quality local institutional program performance. Additionally, 95 local program offerings across 24 districts were reported by the district as undergoing a program improvement plan, which demonstrates the districts' commitment to continuous improvement and this was recognized by the department in the evaluation of local program quality. The CTE audit review team identified 254 local offerings of secondary programs across 42 districts that did not provide enough data or information for the review team to confirm local program quality. Additionally, 13 missing local reviews were not submitted (across two districts).

It should be noted that the 254 local reviews were flagged because they did not provide sufficient evidence to demonstrate local program quality; however, this does not necessarily mean that the program is low-performing. Rather, the CTE audit team of reviewers required additional information to make a determination of local program quality. Due to the high number of local terminations reported by the districts and colleges, as well as the fact that districts and colleges were allowed to submit the local review they had available, the department is not recommending local termination of these programs at this time. The department will, however, continue to monitor these programs for quality and work with districts and colleges to ensure for continuous improvement of underperforming programs. The follow-up for these programs is discussed in the "Sharing Information" section later in this report.

SECONDARY PROGRAMS – MIDDLE GRADES, WORK BASED LEARNING/CAPSTONE AND OTHER CTE COURSES

After accounting for recently daggered and terminated programs, there were 129 programs reviewed for the internal CTE audit of middle grades, WBL/

Capstone and other CTE programs. Of these, 58 (45 percent) were middle grades courses, 46 (36 percent) were WBL/Capstone courses and 25 (19 percent) were other CTE courses. As part of the internal review process, DCAE staff reviewed the courses and evaluated the following criteria:

Middle grades

- Does the course provide the opportunity for students to learn about a variety of careers in the associated career cluster?
- Does the course provide a pathway to a high school CTE program?
- Does the course prepare students for recognized industry certification or Digital Tools examinations?
- Does the course contain unnecessary duplication of a similar course in the same career cluster, and if yes, what percentage is duplication?

WBL/Capstone

- Does the program meet the definition of WBL?
- Is the program part of a career pathway?
- Does the program have standards and benchmarks for employability skills?
- Does the program contain unnecessary duplication of a similar WBL program in the career cluster, and if yes, what percentage is duplication?

Other CTE

- Is the program part of a career pathway?
- Does the program teach life skills?
- Does the program align or embed national standards?
- Does the program meet the needs for a special population?
- Does the program align to an existing secondary job preparatory or technology education program?
- Does the program prepare students for recognized industry certification or Digital Tools examinations?
- Does the program contain unnecessary duplication of a similar program in the career cluster, and if yes, what percentage is duplication?

The internal review conducted by DCAE staff identified that many programs should remain as they are, there are programs that would benefit from consolidation and a small number of programs may not be meeting the needs of students.⁶ The department intends to conduct an additional external review with content area experts to further investigate these initial recommendations derived from the internal review.

POSTSECONDARY LOCAL REVIEWS

LOCAL TERMINATIONS OF POSTSECONDARY PROGRAM OFFERINGS

The local review process required that districts and FCS institutions indicate whether they plan to terminate locally their offering of programs that did not meet performance benchmarks or market demand in the Phase 1 review. Table 5 below reports that there were 286 postsecondary programs in the CTE audit that were sent for a local review associated with 1,133 local program offerings. Districts and colleges reported that they have either recently terminated, or plan to terminate 320 local offerings (28 percent) of postsecondary programs that did not meet the benchmarks in Phase 1 of the CTE audit.

⁶ The internal analyses yielded the following preliminary recommendations. For the 58 middle grades courses, 22 should remain as they are, 33 consolidated, two deleted and one moved to the Bureau of Standards and Instructional Support. For the 46 WBL courses, eight should remain as they are, six consolidated and four moved to Technology Education as a culminating course. For the 25 other CTE courses, eight should remain as they are, eight recommended for consolidation, two recommended to be moved into an existing program, two recommended for deletion and five were previously deleted.

TABLE 5: POSTSECONDARY CTE PROGRAMS SENT FOR LOCAL REVIEW AND TERMINATIONS REPORTED BY DISTRICTS

Action Required for Program	Programs of Study Sent for Local Review*	Local Offerings of Programs of Study	Local Offerings Reported as Terminated or Planning to Terminate
Local institutional performance review	240	1,010	291
Local market demand review	17	40	3
Local institutional performance and market demand review	29	83	26
Total	286	1,133	320

* Includes active programs that had insufficient data for the phase 1 analysis and new programs that did not meet market demand in phase 1.

Fifty-six districts and colleges reported at least one termination of a local postsecondary program offering, with nine districts or FCS colleges reporting 10 or more local program terminations. The reporting of at least one postsecondary program termination across nearly every district and college demonstrates that institutions are carefully reviewing whether postsecondary programs are meeting the performance standards and market demand in their

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local context. The most common reasons reported for local termination were low enrollments as well as the results of internal program review.

Of the 320 terminations of local postsecondary programs, almost half were career certificates (48 percent) followed by college credit certificates (27 percent), AS/AAS's (16 percent), apprenticeships (five percent), ATD's (three percent), and baccalaureates (one percent). In terms of all required local program reviews, local terminations were overrepresented among career certificates (48 percent of all terminations but only 38 percent of all local programs under review) and local terminations were underrepresented among AS/AAS degrees (only 16 percent of all terminations but 24 percent of all local programs under review). College credit certificate terminations were slightly underrepresented (only 27 percent of all terminations but 31 percent of all local programs under review). The distribution of program terminations by credential type compared to all programs sent for local review should be investigated further to identify why some credential types are terminated at higher rates than others.

The 320 local program terminations occurred across 164 unique programs of study. Among the 164 unique programs of study, one-fourth of all local terminations (79 local terminations) were concentrated among the 13 programs of study with the highest number of local terminations. Examples of the programs with the most local terminations include Administrative Office Specialist (13 terminations), Patient Care Assistant (10 terminations), Medical Record Transcribing – ATD (seven terminations), Applied Cybersecurity (six terminations), Building Construction Technologies (six terminations), Early Childhood Education (six terminations), and Information Technology Administration (six terminations). There were fifty unique programs of study that were only offered at one district/college that were reported as being terminated by the district/college. Further, there were an additional 50 programs of study that were reported as being locally terminated by half or more of the districts/colleges that offer the program. This demonstrates general

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agreement of the inability of the program to meet the needs of students locally among the 164 unique postsecondary programs of study that were reported as being terminated.

A key component to producing quality program offerings requires a thorough assessment of programs and adjusting program offerings based on these assessments. A vast majority of Florida's districts and colleges are working to ensure that postsecondary program offerings are aligned with local performance standards and market demand. This was made evident by the number of voluntary terminations reported in the CTE audit. Further investigation should identify the overrepresentation of career certificates among postsecondary program terminations.

MARKET DEMAND

At the postsecondary level, there were 46 programs of study sent for local review of market demand, for a total of 123 local reviews among the districts and colleges.⁷ These included new and existing postsecondary programs of study that were reviewed in Phase 1 and did not meet market demand. After accounting for local terminations reported back to the department, there were 94 local program offerings reviewed across 39 unique programs. The department assessed the local market demand reported for these programs using the LMA's submitted on the CLNA's for the Perkins V applications in fall 2020. For program offerings that did not appear on the LMA, institutions were required to submit a supplemental local market demand review form.

Among these 94 offerings of postsecondary programs that required a review of local market demand, the majority (70 offerings or 74 percent) used their LMA to evaluate market demand, eight local offerings (nine percent) were not reported on an LMA but instead were submitted through a supplemental

⁷ Among these postsecondary programs flagged for local review of market demand, there were 29 programs of study associated with 83 local offerings (67 percent of offerings) that also required a local review of institutional performance. These programs are also counted in every section referencing postsecondary local program institutional performance.

submission form and 16 (18 percent) local offerings were missing a review of local market demand through either an LMA or supplemental CTE audit form. These districts and colleges will be notified of the missing submissions for the CTE audit and asked to submit a supplemental justification of local market demand if they plan to continue to offer the program. The department will review these submissions to ensure that local program offerings are serving students and meeting market demand. Programs that do not demonstrate current or future market demand should be considered for program revision (adjusting learning outcomes to meet market demands), consolidation with like-programs, or program termination.

Among the 78 local offerings that were reviewed for local market demand, there were 11 local program offerings that institutions indicated as “not being aligned with local market demand” as per the LMA or supplemental form. These 11 programs will be further reviewed by the department in collaboration with the districts/colleges to determine if these programs are effectively serving students and meeting market demand. Programs that are not serving students and meeting local demand will be considered for recommendation for program revision, consolidation with like-program, or program termination. Therefore, 67 local offerings were reviewed at the local level and demonstrated that their program met the local market demand. Among these 67 local offerings, 38 (57 percent) demonstrated local market demand using a primary source.⁸

- Four of these 38 local offerings demonstrated market demand using the primary sources of the 2019-20 and 2018-19 Statewide DOL. These local program offerings were evaluated using an occupation that was different than the occupation associated with the program in the Phase 1 statewide analysis.
- Twenty-two of these 38 local offerings demonstrated market demand using the primary sources of the 2019-20 and the 2018-19 Regional DOL.

⁸ The total number of Primary Sources used to demonstrate market demand does not equal 38 because some local offerings demonstrated more than one Primary Source of local market demand.

Approximately half of these local offerings demonstrated local market demand by aligning the program of study to a different occupation than what was assessed for that program in Phase 1 of the CTE audit. Alternatively, the other half of local offerings demonstrated market demand using the 2019-20 Regional DOL, whereas Phase 1 of the CTE audit only had data available on the 2018-19 Regional DOL. In other words, occupations that did not appear on 2018-19 Regional DOL used in Phase 1 of the CTE audit did appear on the 2019-20 Regional DOL that was utilized in Phase 2 of the CTE audit.

- Among the other programs that used a different primary source to demonstrate local market demand, six local offerings identified market demand using the 2019-20 and 2018-19 Regional TOL, 16 local offerings used the Enterprise Florida Targeted Industry Sector list, 13 local offerings used a targeted occupation or sector identified by the local workforce development board in a current local WIOA plan, and one local offering cited that the program as an Agriculture-related program.

Among the 67 local offerings that were reviewed locally and demonstrated that their program met the local market demand, 29 program offerings (43 percent) demonstrated local market demand using a secondary source.⁹ The most utilized secondary sources were an employer or industry association letter of support (26 program offerings) and job analytics resources for the region (16 program offerings). Other secondary sources used were a local workforce development board letter of support (nine program offerings), a local chamber of commerce letter of support (five program offerings) and an economic development agency letter of support (four program offerings).

In sum, through the local review of market demand, districts and colleges that reviewed programs locally per the CTE audit were able to demonstrate their programs' alignment to the labor market using additional measures that were

⁹ The total number of Secondary Sources used to demonstrate market demand reflects that each local offering justified market demand with two or more Secondary Sources.

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not incorporated in Phase 1 of the CTE audit. The majority of programs were justified through a Statewide or Regional DOL, measures that were included in Phase 1 of the CTE audit using an alternative occupational alignment to the program of study. The remaining programs demonstrated local market demand using secondary sources, predominately being a letter of support for the program from an employer or industry association. The department will correspond with districts and colleges that were not able to demonstrate market demand for programs of study that they plan to continue to offer. Programs that do not demonstrate current or future market demand should be considered for program revision (adjusting learning outcomes to meet market demands), consolidation with like-programs or program termination. The department's recommendations to either improve or terminate programs will be made with input from the districts and colleges.

INSTITUTIONAL PERFORMANCE

At the postsecondary level, there were 269 programs of study that were sent for a total of 1,093 local reviews of institutional performance. After accounting for local terminations reported back to the department by the districts and colleges, there were 776 reviews submitted of local institutional program performance across 219 programs of study. The CTE audit review team evaluated submissions for local program quality among these 776 local program offerings. These included postsecondary programs that were reviewed for institutional performance in Phase 1 and didn't meet benchmarks at the state-level review (601 local offerings across 109 programs) and programs that were not reviewed for institutional performance in Phase 1 due to insufficient data (175 local offerings across 110 programs).

Each of the submitted local reviews was evaluated by more than one member of the CTE audit review team. The majority of the local program reviews demonstrated either adequate or high quality local institutional program performance. Additionally, there were 132 local program offerings that were reported as undergoing program improvement plans (across 29 districts/

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colleges), and this commitment to continuous improvement by the institutions was recognized by the department in the evaluation of local program quality. The CTE audit review team identified 181 local offerings of postsecondary programs across 30 districts or colleges that did not provide enough data or information for the review team to confirm local program quality. Additionally, there were eight missing local reviews of institutional performance that were not submitted (from one institution).

It should be noted that the 181 local reviews were flagged because they did not provide sufficient evidence to demonstrate local program quality. This does not necessary indicate that the program is performing at low-performing. Rather, the CTE audit team of reviewers needs additional information to make a determination of local program quality. The follow-up for these programs is discussed in the Sharing Information section of this report. Due to the high number of local terminations reported by the districts and colleges, as well as the fact that districts and colleges were allowed to submit whatever local review they had available, the department is not recommending local termination of these programs at this time. The department will continue to monitor these programs for quality, however, and work with districts and colleges to ensure for continuous improvement of underperforming programs.

There were three baccalaureate programs at one college that had findings related to low enrollments. DFC staff recommended the college submit a plan to recruit and enroll students in the programs, consolidate the programs with like-programs or terminate the programs. Upon further review with college leadership, there was a decision to terminate these programs. A fourth baccalaureate program is under further review in coordination with the FCS institution to determine next steps.

SECTION 6: SHARING INFORMATION AND BEST PRACTICES (PHASE 3)

BEST PRACTICES FOR LOCALLY REVIEWING PROGRAM QUALITY

Phase 3 in year one of the CTE audit pertained to the identification of exceptional strategies, or best practices, that districts and colleges employed to review and monitor their programs locally. The ability for districts and colleges to self-monitor their local program institutional performance is essential to the health of the local program offerings across the state. Local education agencies must regularly conduct in-house analyses to monitor the performance of their program offerings and the achievements of their students. Districts and postsecondary institutions that have a regular, rigorous assessment of their programs can better understand which programs are performing well and which programs need improvement plans.

Year one of the CTE audit allowed districts and colleges to submit various types of program reviews to demonstrate local institutional program performance. These submissions ranged in rigor, metrics, and approach, all attempting to justify why local program offerings demonstrated high institutional performance and quality. After review of the over 2,000 submissions, the CTE audit team

identified the exemplars for monitoring programs locally. These best practices and useful strategies identified in Phase 3 can be used to enhance the CTE audit process at the system level and can be used by stakeholders to enhance their local monitoring and evaluation of their programs.

“Exemplar” reviews identified by the CTE audit review team did not necessarily indicate that a program was performing well locally; rather, exemplar reviews were those that implemented a rigorous, objective, data-driven approach to evaluating local performance. In year one, Phase 3 describes the emerging themes among exemplar reviews as best practices for locally reviewing program performance. Districts and postsecondary institutions across Florida should reflect if their local reviews of program performance, the extent to which industry itself is an integral part of the process, and work to implement similar processes. The outstanding best practices for locally reviewing programs in year one of the CTE Audit include multiple measures, using a mixed methods approach, analyzing data trends and identifying areas of specific improvement plans.

INCLUDE MULTIPLE MEASURES

Districts and colleges were able to make a strong case for local program quality when there were data provided on a variety of aspects of program performance. The quality and health of a program cannot be effectively assessed by focusing on one or two metrics. Rather, programs must be assessed holistically to determine the degree to which they effectively serve students and contribute to meaningful academic and employment outcomes.

“Multiple measures” refer to the strategy of assessing a program’s success or quality through numerous metrics over a range of focus areas. By rigorously reviewing program quality through a multifaceted approach, institutions can ensure their programs’ ability to serve a large and diverse body of students, retain students, move students through the program promptly, provide meaningful training for employment and maintain strong alignment with a

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changing labor market. Using multiple measures in local program assessment ensures that a program is contributing to student success in multiple domains. In year one of the audit, several institutions used multiple measures to assess a program across various domains including program enrollment, course performance, graduate outcomes and alignment to industry-recognized certifications. Further, when evaluating a program within a specific domain a variety of measures were utilized.

For example, institutions that reviewed a program's student demographics among program enrollees by race/ethnicity, gender and age were able to identify their core audience and evaluate the programs' cultural diversity and inclusion. Further, measuring enrollment included measuring not only student headcount but also program capacity and average class size, both important measures in resource allocation and student success. Other pertinent domain metrics presented by institutions were industry partnerships, alignment to industry recognized certifications, and numerous graduate outcomes. These dynamic reviews allowed the institutions to draw conclusions and assess patterns in the data that would not be gleaned by assessing programs with only a few measures of program performance. Employing this exemplary process at the local level proved to be a significant aid in the local frameworks and organization of program criteria.

The theme that emerged from districts and institutions using multiple measures for their local program reviews provides promising evidence that Florida's CTE programs are indeed being rigorously monitored at the local level. The department will continue to monitor and disseminate information on how all districts and colleges can also implement these practices locally.

USE A MIXED METHODS APPROACH

Exemplar local review processes conducted by the districts and colleges incorporated both quantitative and qualitative analyses, referred to as a “mixed methods” approach. Quantitative research pertains to analyzing numerical data trends to understand student and program performance, rates and benchmarks on established metrics. Qualitative research, on the other hand, involves investigating non-numerical sources of information to provide a more in-depth understanding of why a particular pattern or performance outcome is occurring. In other words, quantitative data analysis can effectively summarize what is occurring at the local program level whereas qualitative data analysis can help institutions and administrators contextualize the outcomes that are occurring.

The integration of qualitative information and quantitative data equipped local stakeholders with a more holistic understanding of why their programs were successful. Some local institutions’ review process involved first identifying performance patterns through quantitative data that was followed by a qualitative investigation as to why their program was performing well or not. The quantitative data served as the foundation and the qualitative information contextualized the reasons behind the quantitative findings. For example, some exemplar reviews noted a decrease in retention rates and then investigated the reasons for the decrease. Local reviewers used questionnaires, interviews or group meetings with students, teachers and administrators to better understand the cause of decreased retention rates. Fully understanding the reasons behind low performance metrics allow local stakeholders to strategize for improvement plans. Alternatively, fully understanding the causes behind successful performance metrics for specific programs allows local stakeholders to apply similar techniques to increase performance in other programs.

This mechanism for assessing the ongoing needs of a program by way of mixed methods demonstrated that many programs at the local level are conducting in-depth reviews. Detailing intricate quantitative and qualitative data and information allow institutions to better understand their successes and how to

maintain these performance goals. The department will continue to monitor and disseminate information on how additional districts and colleges can also implement these practices locally.

ANALYZE DATA TRENDS

High-quality local reviews included an analysis of performance trends over time to contextualize program performance in the current year. Some institutions provided a three-year snapshot of their performance metrics for various relevant metrics such as retention rates, completion rates, enrollments and graduate outcomes. Further, institutions that incorporated data from multiple years assessed whether performance was trending upward or downward over time. By analyzing whether performance is trending upward or downward, as opposed to assessing performance from a single point in time, institutions were able to understand the trajectory of their program's performance.

For example, one district reported its retention rates over the course of three years and noted that its current retention rate was lower than its institutional goal. However, the district was able to identify that their retention rate had increased by over 10 percentage points over the past two years, which served as an indicator that their efforts to improve retention were impactful and should be maintained. Data trends provide additional substance to local reviews, and these types of analyses demonstrated institutions' commitment to maintaining quality programs or improving upon lower performing programs by evaluating the trajectory of program performance.

IDENTIFY AREAS FOR TARGETED IMPROVEMENT PLANS

Local reviews that recognized a need for an action-oriented improvement plan, coupled with targeted interventions for specific areas that did not meet quality standards were noted as exemplar reviews. Embedding improvement plans into the local review process signify that a thorough review has been conducted,

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performance deficiencies are acknowledged and a plan to intervene in specified areas has been developed. This best practice entailed using the data to identify a specified area where performance was lacking, revisiting the intended standards and performance goals and finally proposing the best method for action-oriented improvement. Programs that used improvement plans cited shortcomings in areas of enrollment, program relevance, curriculum, increased withdrawal rate and retention.

For example, some institutions' programs identified targeted improvement plans related to programs with low and under-capacity enrollment. In one case, the institution used historical and current quantitative data to determine that one AS program's low enrollments were a persistent issue and formulated a goal to increase enrollment. It also identified potential factors that would inhibit reaching this goal. The institution determined that low program enrollment was associated, in part, with increased student interest in the AA degree. While still recognizing the value of the AA, the institution developed an action plan to enhance the AS degree's alignment with high value, high wage job opportunities and communicated these changes to attract potential students. The institution noted the need to elevate the job market alignment of the AS degree program to better serve the students, and then in turn increase enrollments in the program.

Improvement plans call to the forefront strengths and weaknesses of a program with the intent of seeing progression. When using strategic planning properly, institutions can effectively improve upon the program to best serve students. This holistic outlook gives programs a path towards achieving success and producing quality CTE programming. The department will continue to monitor and disseminate information on how additional districts and colleges can also implement these practices locally.

SHARING INFORMATION

The department and the CTE audit team will share with leadership at the districts and colleges the findings of year one of the CTE audit. The communication plan will include the following components:

- Identify programs that successfully demonstrated local program quality and local market demand through the local review process.
- Identify programs that went through the local program process of institutional program performance, but for which the submitted local reviews did not provide sufficient data or information to demonstrate local program quality. Moreover, districts and institutions will be allowed to resubmit their local review, but this is not required. These programs will be flagged for a follow-up review in the upcoming year of the CTE audit.
- Notify districts or colleges of noncompliance with the requirements of year one cycle of the CTE audit. These districts and colleges will be asked to provide a local review to comply with the first year of the CTE audit. Submissions will be reviewed by the CTE audit team.

FUTURE OF THE CTE AUDIT

The department and the CTE audit team seek to improve the annual CTE audit process to best serve Florida's CTE students and the Florida economy. Through reflection and feedback from the local stakeholders on challenges and successes, year one of the CTE audit revealed components of the audit process that can be enhanced. Some targeted areas for enhancement and improvement are described in the section below.

ESTABLISH AND MAINTAIN AN ACADEMIC PROGRAM INVENTORY (OF LOCAL OFFERINGS)

The success of the CTE audit depends on an accurate understanding of which programs are and are not being offered at the local level districts and colleges. The DCAE maintains an inventory of the approved CTE program frameworks that are allowable offerings by districts and colleges at the local level; however, this inventory does not monitor which institutions are actively offering a program. The department can use retrospective program enrollment data submitted to the system-level office to identify the specific programs offered by each institution in the previous reporting year. This strategy does not provide a “real-time” inventory of local offerings for the current academic year and has the possibility of inaccuracies if there are enrollment data reporting errors. Another potential issue with this strategy is that institutions may continue to actively offer programs but have no reportable enrollments in a given year. In these instances, the lack of enrollment data would not accurately reflect the local availability of programs to students. Therefore, the department seeks to develop a real-time Academic Program Inventory (API) for all secondary and postsecondary CTE offerings. The API will allow the CTE audit team to more accurately assess the gaps in local program availability and changing market needs.

INCREASED STANDARDIZATION OF THE LOCAL REVIEW PROCESS

The CTE audit evaluation process will be enhanced when the districts’ and colleges’ local level program reviews are conducted using consistent metrics and methodologies. As previously described, in year one of the CTE audit it was intended to have all districts and colleges submit the same local review. Due to the health pandemic, districts and colleges instead submitted their own local reviews. Therefore, the measurement criteria for programs at the local level was inconsistent across different districts and colleges. To accurately and consistently assess the health of programs in different regions across the

state, the programs must be evaluated by the same criteria at the local level. The upcoming years of the CTE audit will achieve this through two strategies. First, the department will support the districts and colleges by pulling local level program measures using data submitted to the system level office. This will ensure that some of the metrics used to assess programs at the local level are consistent. Second, the CTE audit team will employ a more standardized request of supplemental local level information from the districts, similar to what was originally intended in year one of the CTE audit. These two strategies will enhance the ability to assess programs using similar criteria in various local contexts.

IMPROVED ALIGNMENT BETWEEN PROGRAMS OF STUDY (CIP CODES) AND OCCUPATIONS (SOC CODES)

The CTE audit team will consider refinement to the measurement of market demand by recognizing some CTE programs train for more than one occupation. In year one of the CTE audit, Phase 1 assessed market demand for a program of study based on a single occupation that the program trains for. This alignment was referred to as the “primary occupation” (SOC code) associated with the program. In Phase 2, districts and colleges identified that there are also “alternate or secondary occupations” that some programs train for, not identified in Phase 1 of the CTE audit. Therefore, the CTE audit methodology will be enhanced by incorporating the multiple occupations that a program studies for. In other words, it is important to assess a program’s market demand based on all the occupations it prepares students for. The department is currently working to improve the alignment between programs of study (CIP codes) and SOC codes, and the CTE audit will utilize this new crosswalk upon its completion.

IDENTIFYING BEST PRACTICES FOR BUSINESS AND EDUCATIONAL PARTNERSHIPS

Additional types of best practices will be identified in the upcoming years of the CTE audit. Specifically, the CTE audit team will focus on identifying best practices related to business and educational partnerships in the next year of the CTE audit. In year one of the CTE audit, best practices were highlighted to guide how colleges and districts can improve on their local reviews of program performance. After having addressed this foundational issue related to the CTE audit, the next year will focus on identifying the best practices through which districts and colleges establish and maintain strong pipelines and partnerships with local employers. Investigating and sharing these best practices can enhance institutions' ability to showcase local programs and create awareness among employers, provide work-based learning opportunities and foster CTE professional development. The CTE audit team will continue to investigate how districts and colleges maintain strong partnerships with local employers and adapt their programs to meet the skills and credential needs of the local market.

BACCALAUREATE PROGRAMS AS SEPARATE REVIEW PROCESS

Baccalaureate programs will continue to be evaluated on an annual basis per the requirements of the CTE audit; however, these programs will be evaluated through a separate process than the other postsecondary CTE credentials. Year one of the CTE audit revealed that the workforce baccalaureate programs offered in the FCS would be better served through a modified version of the existing annual baccalaureate accountability process (per section 1007.33, F.S) that also meets the goals and guiding principles of the CTE audit. The State Board of Education recently adopted new forms (Form No. BAAC-03 and BAAC-04) that streamline the review process and adhere to the requirements of both the annual baccalaureate accountability review and the CTE audit. Through this revised strategy, colleges are now required to submit only a single

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review of their baccalaureate programs that assesses institutional performance and local market demand. College administrators have already been made aware of this rule change.

SECTION 7: CONCLUSION

A condition of Florida's continued economic success is the ability to educate for the future of work. This, in turn, requires the strengthening of the state's CTE programs and pathways in view of developing a robust ecosystem of innovation and cross-sector partnerships. As Executive Order 19-31 indicated, we must first understand what our CTE programs and pathways currently provide. Do they align to our state's workforce needs and opportunities? Do they provide the kinds of outcomes needed for the economic and social mobility of our residents? How are they incorporating skills to allow students to adequately grapple with the velocity of technological change, automation, machine and deep learning?

To answer these questions, the department collaborated with state business, education and workforce leaders to develop a methodology to measure CTE program quality. For the active programs with sufficient data, the statewide review found a majority – 68 percent – of secondary and postsecondary CTE programs met benchmarks on market demand, if applicable, and institutional performance. Roughly one-fourth did not meet benchmarks on institutional performance but did meet benchmarks on market demand. Three percent did not meet market demand benchmarks. Only 2 percent of programs did not meet the benchmarks for both market demand and institutional performance.

Programs were sent for a local review of institutional performance or market demand if they did not meet the established benchmarks in the statewide review or if there was insufficient data for analysis in the statewide review. The local reviews provided an even richer assessment of data and information on institutional program quality and market demand through a wide variety of reviews by the districts and colleges. The districts and colleges reported a large number of program terminations at the local level, indicating that institutions are working intently to offer high quality programs that meet local

market demand. Among programs that will continue to be offered, the majority demonstrated quality institutional performance at the local level. Some districts and colleges will benefit with increased guidance on how to evaluate programs locally, as not all submissions made for the CTE audit included sufficient information for the CTE audit team to confirm program quality. Additionally, whereas nearly all programs sent for local review demonstrated local market demand, there was a small number of programs that did not and the department will contact the corresponding districts to determine the viability of these programs.

The department recognizes the importance of access to high quality data that connects secondary and postsecondary education outcomes with key workforce data. Florida is fortunate to have a statewide longitudinal data system that aids in facilitating this process. However, there is still more work to be done in order to strengthen the current review of institutional performance and market demand. Additional work is needed to identify mechanisms for the department to access data that may currently be proprietary, as well as additional measures that may not currently be captured in existing data systems.

In reflecting on year one of the CTE audit process, the department recognizes both the successes and the lessons learned regarding the statewide and local review of programs. The department will continue to refine the CTE audit methodology and process in order to best serve students, local stakeholders and the Florida economy through the improvement of assessing programs for their quality and alignment to changing workforce demands.

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FLORIDA'S CAREER AND TECHNICAL EDUCATION AUDIT:

Results from Statewide Review of Programs

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